PUERTO RICO ENVIRONMENTAL QUALITY BOARD
SUPERFUND PA/SI DIVISION
REGION II

MANAGEMENT/TASK WORK PLAN

FOR THE

CELIA'S LAUNDRY, INC.

LOCATED IN

247 ELEANOR ROOSEVELT STREET, SAN JUAN, PR

SITE MANAGER: Miriam Ortiz Torres

DATE PREPARED: January 27, 2004

DISTRIBUTION:

Name	Initial / Date

PREQB REPRESENTATIVE:

Reviewed by:

Miguel A. Maldonado Negrón

DATE: April 16, 2004

Juan J. Babá Peebles

DATE: April 26, 2004

EPA REPRESENTATIVE:

Reviewed by:

Juan E. Dávila

DATE: 5/10/04

238881

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PREQB/TDD SUMMARY

TDD Summary:

TDD No: 02-0401-39	**U.S. EPA Site No: PR0002196368**
Site/Project Name:	**CELIA'S LAUNDRY, INC.**
Location:	247 ELEANOR ROOSEVELT STREET, SAN JUAN, PR
PREQB Representative:	Juan J. Babá Peebles or Miguel A. Maldonado Negrón
EPA Regional Project Officer:	Eng. Juan E. Dávila
Date TDD Issued:	December 5, 2003
Date of Completion:	January 29, 2004

Summary of Assignment/Project Objective:

This workplan describes the activities to be performed at Celia's Laundry, Inc., located at 247 Eleanor Roosevelt Street, San Juan, Puerto Rico. The activities will include, among others, a site inspection and sampling that will be used to complete a sampling trip report and the Final Screening Site Inspection (SSI) Report.

Deliverable(s) for EPA Use: (Check all those that apply)

- ☑ **Sampling Trip Report**
- ☑ **Final SSI Report**
- ☑ **Other: PRE-score**

Required Reviews and Approvals: (Check all those that apply)

- ☑ **Technical Supervisor**
- ☑ **Final Report Review by technically qualified personnel independent of report preparation.**
- ☑ **Site Manager**

PREQB/TDD SUMMARY

TDD Summary:

TDD No: 02-0401-39	**U.S. EPA Site No: PRR000014837**
Site/Project Name:	**CELIA'S LAUNDRY, INC.**
Location:	247 ELEANOR ROOSEVELT STREET, SAN JUAN, PR
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SITE DESCRIPTION AND HISTORY

Prepare a brief description of the site (landfill, drum, storage, etc.), and conclusions from past data assessments; indicate the current or past operators.

Celia's Laundry, Inc. (CLI) is located on the first floor of a two (2) stories building that is to the north of Eleanor Roosevelt Street and is surrounded by other commercial facilities. There is a residential apartment on the second floor. There are three (3) concrete buildings on the eastern, western, and northern sides of the property and there are no daycare centers or schools within 200 feet from the site. The site is rectangular in shape and consist of a concrete-covered parking area to the south, one concrete-covered area to the west of and besides the CLI building, another small concrete-covered area to the north and besides the CLI building, and a large area with exposed soil also to the north of the CLI building. This large area of exposed soil is in the backyard of the property and has small areas covered with vegetation or gravel (Figure 2).

Inside the CLI building there is a reception area, two large halls where the regular machine wash, drying, and ironing of clothing is performed, and a dry-cleaning area. The dry-cleaning area is in a room on the northern side of the building that opens into the property backyard. This room is covered by a metal roof and consists of a concrete platform with a primary containment system (i.e. ditch). The primary containment system is below the dry-cleaning machine and consists of a ditch covered by a metal screen, and was designed to collect any tetrachloroethylene accidentally released from the machine. All the solvent collected inside the ditch is then pumped back into a 55-gallon metal drum that is constantly connected to the dry-cleaning machine for reuse. Both the dry-cleaning machine and the 55-gallon drum are kept above the primary containment system. No secondary containment system exists at the site that will prevent any tetrachloroethylene accidentally released from this primary containment system from reaching the area of exposed soil in the backyard. The fact that there is a concrete ramp next to the primary containment system, which reaches the exposed soil in the backyard, may increase risk of any chemical from reaching the ground surface.

CLI have been engaged in the dry-cleaning, machine washing, drying, and ironing of clothing since 1978. Tailoring is also performed at the site. According to Mrs. Celia Aristy, Manager of CLI, Mrs. Noemí López, who also lives on the second floor, owns the property. Currently there are 10

employees working on site. CLI has an updated PREQB air emission permit (PFE-65-0101-0019-I-II-0) to operate a dry-cleaning machine, a boiler, and two electric dryers. The rinse water from the washing machines is discarded directly into the Puerto Rico Aqueduct and Sewers Authority (PRASA) sewer system.

The dry-cleaning process is performed using tetrachloroethylene (UN 1897). During an Off/On Site Reconnaissance performed on November 29, 2001, five corroded, 55-gallon metal drums were observed on the backyard of the property (northern side). Two of these drums were labeled as containing tetrachloroethylene and were located over an uncovered, outdoor concrete platform with no containment system. To the north and besides these two drums, there was another corroded drum, also labeled as containing tetrachloroethylene. This drum was partially buried directly into the ground, laying on its side and located over the exposed soil area on the backyard (Figure 2). In the area of exposed soil on the backyard, two additional corroded metal 55-gallon drums were observed next to and to the north of the three drums containing tetrachloroethylene. These drums were also partially buried directly into the ground and laying on their side (Figure 2). According to Mrs. Aristy, these drums were previously used to store kerosene. One of these drums was over the gravel area while the other was over the exposed soil (Figure 2)

Within a 4-mile radius from the site there are twenty-seven (27) PRASA drinking water wells. Two of these wells are within a 2-mile radius, are downgradient (Pozo Truman and Pozo Miguel Such), and were closed in 1987 due to contamination with volatile organic compounds (VOC's), including tetrachloroethylene, among others. There are also two other PRASA drinking water wells that are downgradient and within ½ - mile distance from the site (Pozo Extension Roosevelt and Pozo Parque Roosevelt). The fact that tetrachloroethylene is being used at the site for the dry-cleaning process since 1978, that there were four 55-gallon metal drums labeled as containing either tetrachloroethylene or kerosene laying on their side and directly over the ground at the site, and that there are two wells located downgradient from the site closed due to contamination with VOC's (including tetrachloroethylene), CLI represents a threat to other drinking water wells in the area.

Technical Approach:

☑ **See Sampling Plan,_____ Dated: _____**
Provided as Attachment B to this Work Plan.

☐ **Other: Provide a rationale or explanation if methods to be followed deviate or are not encompassed in existing work instructions or EPA-approved guidance documents.**

Personnel Requirements:

PERSONNEL ASSIGMENT	NUMBER OF PERSONS REQUIRED
☑ **Site Manager**	**1**
☑ **Site Safety Officer/ GPS Data Collector**	**1**
☑ **Samples Management Officer**	**1**
☑ **Samplers**	**2**
☑ **Other: Decon**	**1**
☐ **Other**	
TOTAL:	**6**

Personnel Responsibilities: (Check all those that apply)

Site Manager (SM):

☑ Responsible for management and supervision of designated project staff in performance of tasks encompassed by the Work Plan.

☑ Responsible for performance of pre-study tasks including search, review, and evaluation of background information, determination of informational and data needs, and preparation of the study or sampling plan.

☑ Responsible for the documentation of field activities.

☑ Responsible for the preparation of technical directive deliverables.

Site Safety Officer (SSO):

☑ Responsible for the implementation of the site safety plan and, if a hazardous condition exists or develops that might put in risk or danger the personnel, has the authority to shut down field operations.

☑ Responsible of performing the air monitoring during field activities and deciding all health and safety related issues.

Samples Management Officer (SMO):

☑ Responsible for preparing the Field trip blanks, trip blanks, and rinsate blanks for quality assurance and quality control purposes (QA/QC).

☑ Responsible for labeling of sample containers, preparation and disposition of sample custody documents and traffic reports, and preparation of samples for shipment to designated laboratories.

Samplers:

☑ Responsible for conducting sampling activities under the supervision of the SM and in conformance with the methods and procedures specified in this Work Plan and the approved PREQB Superfund PA/SI Division Quality Assurance Project Plan for Screening Site Inspections (QAPP), Revision 8, September 24, 2003.

☑ As required, responsible for assisting the SSO and the SMO on an as-needed basis.

Decon:

☑ Responsible for directing and/or assisting in the performance of all personnel and equipment decontamination activities.

☑ Responsible for sample container and sampling equipment decontamination tasks under the direction of the SM and the SSO.

GPS Data Collector:

☑ Responsible for the operation of the GPS instrument in order to determine the exact location of each sampling point.

List any other required personnel and/or responsibilities not indicated above.

N/A

Referenced Background Data:

List of pre study files search reference information and associated technical directive files.

- Pre-CERCLIS Screening Report, April 25, 2002, Puerto Rico Environmental Quality Board; Superfund files.
- Offsite/Onsite Reconnaissance Information Reporting Form, April 23, 2002, Puerto Rico Environmental Quality Board; Superfund files.

Health and Safety Considerations:

Refer to Attachment A (Site Safety Plan) which has been approved by the Regional Safety Officer.

Title: Generic Health and Safety Plan for Superfund Site Inspections - Revision 1

Date: May 26, 1992

(Safety Officer Approval Date)

Note: All health and safety considerations must conform with requirements provided in OSHA, General Industry Standard, 29 CFR 1910.120, Hazardous Waste Operation and Emergency Response, December 19, 1986.

Interface/Planning Requirements: (reference attachments if necessary)

Interfaces with EPA : (provide contact name and phone number):

Mr. Juan Dávila, Site Manager - USEPA Region II, New York. Telephone number: (212) 637-4341.

Interfaces with State/Local Agencies: (provide contact name and phone number)

Mr. Juan J. Babá Peebles, Director – PREQB. Telephone number: (787) 766-2823.

Site Access Arrangements: (provide contact name and phone number)

Mrs. Celia Aristy, Manager of CLI at 787-765-4325 and Mrs. Priscila M. García, Director of the Environmental Control Department of Puerto Rico Aqueduct and Sewers Authority at (787) 620-2277, extension 2399.

Community Relations Planning Requirements: (briefly describe EPA-approved protocol; provide contact name and phone number)

All aspects concerning community relations will be referred to the Director of the PREQB Education and Communications Office, (787) 767-8049. If necessary, further questions will be referred to Mr. Juan Dávila at USEPA, Region II, telephone number (212) 637-4341.

Special Training Requirements: (other than routine training received by EQB employees)

- Health and Safety Eight-Hours Training
- Sampling for Hazardous Materials
- Forms II Lite

Accountable Records and Documents:

Check of records that will support the validity and evidentiary value of technical work performed.

☑ Work Plan
☑ Site Safety Plan
☑ Sampling Plan
☑ Calibration and maintenance records for measuring and testing equipment (e. g. TVA-1000B, pH meter, multi gas detector)
☑ Correspondence (e. g. Telecon notes, memos, letters)
☑ Written documentation of field activities (e.g. log books, notes, calculations)
☑ Records of reviews and approvals for project control documents and deliverables.
☑ Photographic documentation of field activities

☐ Soil stratigraphic records (e.g. drilling logs)

☑ Deliverable(s) to EPA (list below), Sampling Trip Report, Final SSI Report, PRE-score (diskette)

☑ Other: QAPP, QMP, SOP

Procurement Documents (Specify and attach requests for bids and/or proposals, subcontract agreements, etc.):

N/A

Other accountable documents and records not listed above:

N/A

List and reference the applicable USEPA and PREQB approved operational and technical methods not listed above and applicable to the work encompassed by this Work Plan:

N/A

ATTACHMENT A

SITE SAFETY PLAN

PUERTO RICO ENVIRONMENTAL QUALITY BOARD
SUPERFUND PA/SI DIVISION
REGION II

HEALTH AND SAFETY PLAN

Site Name:	CELIA'S LAUNDRY, INC.
Site Address:	247 ELEANOR ROOSEVELT STREET, SAN JUAN, PR
Site Contact:	Mrs. Celia Aristy, Manager of CLI
Phone Number:	787-765-4325
Other Contacts:	Mrs. Noemí López, property owner
Phone Number:	787-765-4325
Purpose of Site Visit:	Screening Site Inspection
Proposed Date of Work:	May 10- 14, 2004

Proposed Site Investigation Team:

PREQB Personnel:	**Responsibilities:**
Miriam Ortiz Torres	Site Manager
Nereida Hernández Morales	Sample Manager Officer
Frances Segarra	Site Safety Officer/ GPS Data Collector
Pascual Velázquez	Sampler
Ernesto Rosario	Sampler

Prepared by:	Miriam Ortiz Torres Site Manager	Date: 04/12/04
Revised by:	Miguel A. Maldonado Negrón Superfund PA/SI Division Chief	Date: April 16, 2004
PREQB Office Representative:	Juan J. Babá Peebles Emergency Response and Superfund Program Director	Date: APRIL 26, 2004
USEPA Approvals:	Eng. Juan E. Dávila Project Manager	Date: 5/10/04

Background Information:

Site Status: ☑ Active ☐ Inactive ☐ Unknown

SITE HISTORY: & DESCRIPTION: (be specific, include topography, structures, size, etc.)

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Monitoring used on previous site work or previous sampling data: (includes dates and by who work was done)

N/A

Hazard Evaluation:

Waste Types:	☑ Liquid	☐ Solid	☐ Sludge
Characteristics:	☐ Corrosive	☑ Ignitable	☐ Radioactive
	☑ Toxic	☑ Reactive	☑ Volatile
	☐ Unknown	☑ Vapor	☐ Other:

Hazard Identification/Ranking: (based on task and contaminant)

Task: Groundwater Low ☑ Medium ☐ High ☐

Identification of Hazards (chemical and physical):

Chemical: Low concentrations of contaminants are expected.
Physical: None

Task: Soil Low ☑ Medium ☐ High ☐

Identification of Hazards (chemical and physical):

Chemical: Low concentrations of contaminants are expected.
Physical: None.

Hazard Assessment:

The hazards associated with the implementation of this work plan include: the direct contact with pH altered soil or groundwater and the inhalation of acidic or alkaline dusts. Direct contact with acidic or alkaline soils may cause skin irritation (dermatitis). Sulfur dust affinity for water can cause severe irritation when the dust enters in contact with the moist mucous membranes of the eyes and nose. A splash hazard may exist during the sampling preservation activities and decontamination procedures. Goggles, gloves, laboratory coats, and aprons are mandatory to avoid possible skin contact with Hydrochloric Acid (HCl), Nitric Acid (HNO_3), Hexane (C_6H_{14}), Methanol (CH_4O) or Sodium Hydroxide (NaOH). A full facemask with the appropriate cartridges must be worn to avoid inhalation of chemical vapors.

The heat stress hazard is always present in Puerto Rico due to the high temperatures and humid climate. Wearing personal protective equipment (PPE) puts field workers at considerable risk of developing heat stress. Since the incidence of heat stress depends on a variety of factors, all workers, even those not wearing protective equipment, should be monitored for:

- Blood pressure and pulse – If blood pressure exceeds 130/90 mmHg or heart rate exceeds 110 beats per minute, let the worker rest for a minimum of 30 minutes. If conditions persist get medical assistance.

- Oral temperature - If oral temperature exceeds 99.6 °F, let the worker rest in a shadowed place for a minimum of 30 minutes. Do not allow a worker to wear a semipermeable or impermeable garment when his/her oral temperature exceeds 100.6 °F.

The SSO should evaluate each case individually taking into consideration the indicators mentioned above in order to make a determination about allowing the worker return to the sampling activities. The worker must inform of any discomfort or health-related problem immediately. Address and phone number of nearest hospital will be available for all the personnel involved in the sampling activities.

Overall Hazard:

☐ Serious ☐ Moderate ☑ Low ☐ Unknown

Table A-1
Chemical Hazards

Hazardous/Toxic Known or Suspected Materials	Concentration*	Media: Soil (SS), Sediment (SD), Surface water (SW), or Groundwater (GW)	Toxic and Pharmacology Effects	Ionization Potential (IP), or Vapor Pressure VP in air	*TLV (STEL, TWA) IDLH (ppm)	If concentration is > 10 ppm in Media, use NFPA Guidance for Flammability, Incompatibilities, Reactivity, and Special Notice	Applicable Monitoring Instruments for Health and Safety Screening
Kerosene C_9 C_{16} CAS# 8008-20-6	Unknown	SS, GW	**Routes of Entry:** Inhalation, Ingestion, and Skin and/or eye contact. Irrit skin, nose throat; burning sensation in chest; head, nau, weak, vomit, diarr; derm; chemical pneu (aspir liq)	IP: ? VP: 5 mm (100°F)	TWA: 14.38ppm IDLH: N. D. STEL:	Strong oxidizer	TVA-1000B AND THE MULTI GAS DETECTOR
Tetrachloroethylene $Cl_2C=CCl_2$ CAS# 127-18-4	Unknown	SS, GW	**Routes of Entry:** Inhalation, Skin Absorption, Ingestion, and Skin and/or eye contact. Irrit eyes, nose, throat; nau; flush face, neck; verti, dizz, inco, head, som; skin eryt; liver damage; (carc)	IP: 9.32 eV VP: 14 mm	TWA: 100 ppm IDLH: N/A C 200ppm	Strong oxidizer; chemically-active with metals such as lithium, beryllium & barium; caustic soda; sodium hydroxide; potash.	

*** make sure units are the same ppm** $= \frac{mg/m^3 \times 24.45}{\text{molecular weight}} = \frac{mg/L \times 24{,}500}{\text{molecular weight}}$

References: Guide to Occupational Exposure Values-1997, ACGIH.
NIOSH Pocket Guide to Chemical Hazard - USDHHS.
Handbook of Toxic and Hazardous Chemicals and Carcinogens by Marshall Sittig, Third Edition.
NFPA Fire Protection Guide to Hazardous Materials, Twelfth Edition.

Site Name Celia's Laundry, Inc.

Safety Plan No. 02-0401-39

Table A-2
Required Level(s) of Protection*

TASK	NAME	LEVEL OF PPE *Level A, B, C or D*	CLOTHING: *T = Tyvek* *S = Saranex* *F = Field* *C = Chemrel* *P = Polylaminated*	GLOVES *L = Latex* *Ne = Neoprene* *V = Viton* *B = Butyl* *A = PVA* *Ni = Nitrile* *P = PVC* *C= Cotton*	BOOTS *F = Fireman's* *C = Tyvek Cover* *L = Latex Overboot* *B = Butyl Overboot* *N = Neoprene Overboot* *SF = Safety boots*	OTHER MODIFICATIONS:
SM	Miriam Ortiz	C or D	T	L, Ni	SF, L	**Level C respiratory protection will be worn initially. If no reading above background are detected on the PID/FID, personnel will be downgraded to Level D. Level D will be worn by the SMO and during the background sampling. The SMO and samplers should wear safety glasses during sampling preservation.** **Other:** **Safety glasses** **Butyl apron** **Waders** **Leather Work Gloves**
SMO	Nereida Hernández	D	F	L, Ni	SF, L	
SSO	Frances Segarra	C or D	T	L, Ni	SF, L	
SAMPLER	Pascual Velázquez	C or D	T	L, Ni	SF, L	
SAMPLER	Ernesto Rosario	C or D	T	L, Ni	SF, L	
DECON	Ginger Rossy	C or D	T	L, Ni	SF, L	
GPS TECHNICIAN	Frances Segarra	C or D	T	L, Ni	SF, L	

*See Appendix 14 Quality Assurance Project Plan for Screening Site Inspections, PREQB, Superfund PA/SI Division (Revision 8, November 7, 2003).

Summary of Proposed Activities:

Activities will include an onsite inspection, air monitoring, surface water, ground water and soil sampling.

Monitoring Procedures:

Site Monitoring Equipment:

- ☑ TVA-1000B
- ☐ Photoionizer (Photovac 2020)
- ☑ Multigas Detector (% LEL, $\%O_2$, CO, H_2S)
- ☐ Dragger Tube(s) & Pump:
- ☑ Radiation Monitor with Probe
- ☐ Others: _____
- ☐ Mercury Vapor Sniffer
- ☑ Dosimeter
- ☑ Conductivity, pH, and Temperature Meter
- ☐ Water Level Indicator

Methods and Frequency of Surveillance:

Instruments such as the TVA-1000B can be used to detect the presence of many organic vapors or gases either as single compounds or mixtures. Dial readings are frequently referred to, especially with unidentified substances, as total vapor and have concentrations (in ppm). More correctly, they are deflections of the needle on the dial indicating an instrument response and do not directly relate to total concentration in the air. As a guide to selecting Level of Protections, based on dial reading response, the following values could be used. They should not be the sole criteria for selecting Levels of Protection.

DIAL READING	LEVEL OF PROTECTION
Background to 5 ppm	C
5 to 500 ppm	B
500 to 1000 ppm	A

Vapor or gas concentrations, as indicated by the readout on instruments like the TVA-1000B provide useful information that coupled with professional judgment should aid in selecting the appropriate Level of Protection to be worn in an unknown environment. It should not be the single selection criterion, but should be considered with all other available information.

Monitoring Equipment Calibration:

☑ **Toxic Vapor Analyzer TVA 1000B**

The TVA 1000B uses both a flame ionization detector (FID) and a photoionization detector (PID) to sample and measure concentration of gases. The instrument must be calibrated at the beginning of each workday. Calibrate the TVA-1000B by taking an actual gas sample for ZERO and another actual gas sample for SPAN. The SPAN sample must be a known concentration of the calibration gas. Enter the concentration of the span gas and then a sensitivity level for the gas to be measured (Response Factor). The calibration steps to be followed are specified on the instruction book 3455 (the TVA-1000 manual).

☑ **Other:** See the internal SOP's for monitoring equipment calibration to be used during the sampling activities.

Decontamination and Disposal:

The personnel and equipment decontamination procedures will be performed as indicated in the approved "PREQB Superfund PA/SI Division QAPP for SSI" (Revision 8, November 7, 2002). The objective of these procedures is to minimize the risk of exposure to hazardous substances.

All personnel, clothing, equipment, and samples leaving the contaminated area of a site (the Exclusion Zone) must be decontaminated to remove any harmful chemicals or infectious organisms that may have adhered to them. Decontamination activities will be confined to a designated area within the Contamination Reduction Zone (CRZ), known as the Contamination Reduction Corridor (CRC). For step-by-step procedures for decontamination of personnel wearing PPE Levels A through C refer to Tables A-4 to A-6. See Appendix 13 of the approved "PREQB Superfund PA/SI Division QAPP for SSI" (Revision 8, November 7, 2003).

TABLE A-4

LEVEL A DECONTAMINATION PROCEDURES*

STATION	STEP	STANDARD OPERATING PROCEDURES
1	SEGREGATED EQUIPMENT AND SAMPLE DROP	DEPOSIT EQUIPMENT USED ON SITE (TOOLS, SAMPLING DEVICES AND CONTAINERS, MONITORING INSTRUMENTS, RADIOS, CLIPBOARDS, ETC.) AND THE SAMLER CONTAINER FOR PROPER DECONTAMINATION.
2	BOOT COVER AND OUTER GLOVE WASH	SCRUB OUTER BOOT COVERS AND GLOVES WITH DECON SOLUTION OR SOAPY WATER CONTAINING A LOW PHOSPHATE DETERGENT (E.G. ALCONOX).
3	BOOT COVER AND GLOVE RINSE	RINSE OFF DECON SOLUTION FROM STATION 2 USING COPIOUS AMOUNTS OF TAP OR POTABLE WATER.
4	TAPE REMOVAL, BOOT COVER, AND OUTER GLOVE REMOVAL	REMOVE TAPE AROUND BOOTS AND GLOVES AND DEPOSIT IN CONTAINER WITH PLASTIC LINER OR BAG. REMOVE BOOT COVERS AND OUTER GLOVES AND DEPOSIT IN CONTAINER WITH PLASTIC LINER OR BAG.
5	FULLY ENCAPSULATNG SUIT AND BOOT WASH	WASH ENCAPSULATING SUIT AND BOOTS USING SCRUB BRUSH AND DECON SOLUTION OR SOAPY WATER CONTAINING A LOW PHOSPHATE DETERGENT (E.G. ALCONOX). REPEAT AS MANY TIMES AS NECESSARY.
6	FULLY ENCAPSULATNG SUIT AND BOOT RINSE	RINSE OFF DECON SOLUTION USING COPIOUS AMOUNTS OF TAP OR POTABLE WATER. REPEAT AS MANY TIMES AS NECESSARY.
7	AIR TANK CHANGE	IF AN AIR TANK CHANGE IS REQUIRED, THIS IS THE LAST STEP IN THE DECONTAMINATION PROCEDURE. AIR TANK IS EXCHANGED, NEW OUTER GLOVES AND BOOT COVERS DONNED, AND JOINTS TAPED. WORKER THEN RETURNS TO DUTY.
8	SAFETY BOOT, FULLY ENCAPSULATING SUIT, AND HARD HAT REMOVAL	REMOVE SAFETY BOOTS AND DEPOSIT IN CONTAINER WITH PLASTIC LINER. FULLY ENCAPSULATED SUIT IS REMOVED WITH ASSISTANCE OF A HELPER AND LAID OUT ON A DROP CLOTH OR HUNG UP. HARD HAT IS REMOVED. HOT WEATHER REST STATION MAYBE SET UP WITHIN THIS AREA FOR PERSONNEL RETURNING TO SITE.
9	SCBA BACKPACK REMOVAL	WHILE STILL WEARING FACEPIECE, REMOVE BACKPACK AND PLACE IT ON THE TABLE. DISCONNECT HOSE FROM REGULATOR VALVE AND PROCEED TO NEXT STATION.
10	INNER GLOVE WASH RINSE AND FACE PIECE REMOVAL	WASH WITH DECON SOLUTION THAT WILL NOT HARM THE SKIN. REPEAT AS OFTEN AS NECESSARY. RINSE WITH WATER. REPEAT AS MANY TIMES AS NECESSARY. REMOVE FACE PIECE. DEPOSIT IN CONTAINER WITH PLASTIC LINER. AVOID TOUCHING FACE WITH FINGERS.
11	INNER GLOVE REMOVAL	REMOVE INNER GLOVES AND DEPOSIT IN CONTAINER WITH LINER.
12	INNER CLOTHING REMOVAL	REMOVE CLOTHING AND PLACE IN LINED CONTAINER. DO NOT WEAR INNER CLOTHING OFF-SITE SINCE THERE IS A POSSIBILITY THAT SMALL AMOUNTS OF CONTAMINANTS MIGHT HAVE BEEN TRANSFERRED WHILE REMOVING THE FULLY ENCAPSULATING SUIT. DONE AT THE END OF EACH SAMPLING DAY.
13	FIELD WASH	SHOWER IF HIGHLY TOXIC, SKIN-CORROSIVE OR SKIN ABSORBABLE MATERIALS ARE KNOWN OR SUSPECTED TO BE PRESENT. WASH HANDS AND FACE IF SHOWER IS NOT AVAILABLE. DONE AT THE END OF EACH SAMPLING DAY.
14	REDRESS	PUT ON CLEAN CLOTHES. DONE AT THE END OF EACH SAMPLING DAY.

*See Appendix 14 Quality Assurance Project Plan for Screening Site Inspections, PREQB, Superfund PA/SI Division (Revision 8, November 7, 2003).

TABLE A-5

LEVEL B DECONTAMINATION PROCEDURES*

STATION	STEP	STANDARD OPERATING PROCEDURES
1	SEGREGATED EQUIPMENT DROP	DEPOSIT EQUIPMENT USED ON SITE (TOOLS, SAMPLING DEVICES AND CONTAINERS, MONITORING INSTRUMENTS, RADIOS, CLIPBOARDS, ETC.) IN PLASTIC BAGS OR IN DIFFERENT CONTAINERS WITH PLASTIC LINERS. DURING HOT WEATHER OPERATIONS, A COOL DOWN STATION MAY BE SET UP WITHIN THIS AREA.
2	BOOT COVER AND OUTER GLOVE WASH	SCRUB OUTER BOOT COVERS AND GLOVES WITH DECON SOLUTION OR SOAPY WATER CONTAINING A LOW PHOSPHATE DETERGENT (E.G. ALCONOX).
3	BOOT COVER AND GLOVE RINSE	RINSE OFF DECON SOLUTION FROM STATION 2 USING COPIOUS AMOUNTS OF WATER.
4	TAPE REMOVAL, BOOT COVER, AND OUTER GLOVE REMOVAL	REMOVE TAPE AROUND BOOTS AND GLOVES AND DEPOSIT IN CONTAINER WITH PLASTIC LINER OR BAG. BOOT COVERS AND OUTER GLOVES AND DEPOSIT IN CONTAINER WITH PLASTIC LINER OR BAG.
5	CHEMICAL RESISTANT SUIT, SCBA, AND BOOT WASH	WASH ENCAPSULATING SUIT AND BOOTS USING SCRUB BRUSH AND DECON SOLUTION OR SOAPY WATER CONTAINING A LOW PHOSPHATE DETERGENT (E.G. ALCONOX). REPEAT AS MANY TIMES AS NECESSARY.
6	CHEMICAL RESISTANT SUIT, SCBA, AND BOOT RINSE	RINSE OFF DECON SOLUTION USING COPIOUS AMOUNTS OF WATER. REPEAT AS MANY TIMES AS NECESSARY.
7	AIR TANK CHANGE	IF AN AIR TANK CHANGE IS DESIRED, THIS IS THE LAST STEP IN THE DECONTAMINATION PROCEDURE. AIR TANK IS EXCHANGED, NEW OUTER GLOVES AND BOOT COVERS DONNED, AND JOINTS TAPED. WORKER THEN RETURNS TO DUTY.
8	SCBA BACKPACK REMOVAL, CHEMICAL RESISTANT SUIT REMOVAL	WHILE WEARING FACEPIECE, REMOVE BACKPACK AND PLACE ON TABLE. DISCONNECT HOSE FROM REGULATOR VALVE AND PROCEED TO NEXT STATION. WITH ASSISTANCE OF HELPER, REMOVE CHEMICAL RESISTANT SUIT. DEPOSIT IN CONTAINER WITH PLASTIC LINER OR BAG
9	INNER GLOVE WASH AND RINSE	WASH INNER GLOVES WITH DECON SOLUTION AND RINSE WITH WATER. REPEAT AS MANY TIMES AS NECESSARY.
10	FACE PIECE REMOVAL	REMOVE FACE PIECE. DEPOSIT IN CONTAINER WITH PLASTIC LINER. AVOID TOUCHNG FACE WITH FINGERS.
11	INNER GLOVE REMOVAL	REMOVE INNER GLOVES AND DEPOSIT IN CONTAINER WITH LINER OR BAG
12	INNER CLOTHING REMOVAL	REMOVE CLOTHING AND PLACE IN LINED CONTAINER. DO NOT WEAR INNER CLOTHING OFF-SITE SINCE THERE IS A POSSIBILITY THAT SMALL AMOUNTS OF CONTAMINANTS MIGHT HAVE BEEN TRANSFERRED IN REMOVING THE CHEMICAL RESISTANT SUIT. DONE AT THE END OF EACH SAMPLING DAY.
13	FIELD WASH	SHOWER IF HIGHLY TOXIC, SKIN-CORROSIVE OR SKIN ABSORBABLE MATERIALS ARE KNOWN OR SUSPECTED TO BE PRESENT. WASH HANDS AND FACE IF SHOWER IS NOT AVAILABLE. DONE AT THE END OF EACH SAMPLING DAY.
14	REDRESS	PUT ON CLEAN CLOTHES. DONE AT THE END OF EACH SAMPLING DAY.

*See Appendix 14 Quality Assurance Project Plan for Screening Site Inspections, PREQB, Superfund PA/SI Division (Revision 8, November 7, 2003).

TABLE A-6

LEVEL C DECONTAMINATION PROCEDURES*

STATION	STEP	STANDARD OPERATING PROCEDURES
1	SEGREGATED EQUIPMENT DROP	DEPOSIT EQUIPMENT USED ON SITE (TOOLS, SAMPLING DEVICES AND CONTAINERS, MONITORING INSTRUMENTS, RADIOS, CLIPBOARDS, ETC.) IN PLASTIC BAGS OR IN DIFFERENT CONTAINERS WITH PLASTIC LINERS. DURING HOT WEATHER OPERATIONS, A COOL DOWN STATION MAY BE SET UP WITHIN THIS AREA.
2	BOOT COVER AND OUTER GLOVE WASH	SCRUB OUTER BOOT COVERS AND GLOVES WITH DECON SOLUTION OR SOAPY WATER CONTAINING A LOW PHOSPHATE DETERGENT (E.G. ALCONOX).
3	BOOT COVER AND GLOVE RINSE	RINSE OFF DECON SOLUTION FROM STATION 2 USING COPIOUS AMOUNTS OF WATER.
4	TAPE REMOVAL, BOOT COVER AND OUTER GLOVE REMOVAL	REMOVAL TAPE AROUND BOOTS AND GLOVES AND DEPOSIT IN CONTAINER WITH PLASTIC LINER OR BAG REMOVE BOOT COVERS AND OUTER GLOVES AND DEPOSIT IN CONTAINER WITH PLASTIC LINER OR BAG
5	CHEMICAL RESISTANT SUIT, FULL FACE MASK RESPIRATOR, AND BOOT WASH	WASH CHEMICAL RESISTANT SUIT, FULL FACE RESPIRATOR, AND BOOTS USING LONG-HANDLE SCRUB BRUSH AND DECON SOLUTION OR SOAPY WATER CONTAINING A LOW PHOSPHATE DETERGENT (E.G. ALCONOX). REPEAT AS MANY TIMES AS NECESSARY.
6	CHEMICAL RESISTANT SUIT, FULL FACE MASK RESPIRATOR, AND BOOT RINSE	RINSE OFF DECON SOLUTION USING COPIOUS AMOUNTS OF WATER. REPEAT AS MANY TIMES AS NECESSARY.
7	CANISTER OR MASK CHANGE	IF WORKER LEAVES EXCLUSION ZONE TO CHANGE CANISTERS (OR MASK), THIS IS THE LAST STEP IN THE DECONTAMINATION PROCEDURE. WORKER'S CANISTERS ARE EXCHANGED, NEW OUTER GLOVES AND BOOT COVERS DONNED, AND JOINTS TAPED. WORKER THEN RETURNS TO DUTY.
8	SAFETY BOOT, CHEMICAL RESISTANT SUIT REMOVAL	WHILE WEARING FACEPIECE, REMOVE BACKPACK AND PLACE ON TABLE. DISCONNECT HOSE FROM REGULATOR VALVE AND PROCEED TO NEXT STATION. WITH ASSISTANCE OF HELPER, REMOVE CHEMICAL RESISTANT SUIT. DEPOSIT IN CONTAINER WITH PLASTIC LINER OR BAG
9	INNER GLOVE WASH AND RINSE	WASH INNER GLOVES WITH DECON SOLUTION AND RINSE WITH WATER. REPEAT AS MANY TIMES AS NECESSARY.
10	FACE PIECE REMOVAL	REMOVE FACE PIECE. DEPOSIT IN CONTAINER WITH PLASTIC LINER. AVOID TOUCHNG FACE WITH FINGERS.
11	INNER GLOVE REMOVAL	REMOVE INNER GLOVES AND DEPOSIT IN CONTAINER WITH LINER OR BAG
12	INNER CLOTHING REMOVAL	REMOVE CLOTHING AND PLACE IN LINED CONTAINER. DO NOT WEAR INNER CLOTHING OFF-SITE SINCE THERE IS A POSSIBILITY THAT SMALL AMOUNTS OF CONTAMINANTS MIGHT HAVE BEEN TRANSFERRED IN REMOVING THE CHEMICAL RESISTANT SUIT. DONE AT THE END OF EACH SAMPLING DAY.
13	FIELD WASH	SHOWER IF HIGHLY TOXIC, SKIN-CORROSIVE OR SKIN ABSORBABLE MATERIALS ARE KNOWN OR SUSPECTED TO BE PRESENT. WASH HANDS AND FACE IF SHOWER IS NOT AVAILABLE. DONE AT THE END OF EACH SAMPLING DAY.
14	REDRESS	PUT ON CLEAN CLOTHES. DONE AT THE END OF EACH SAMPLING DAY.

*See Appendix 14 Quality Assurance Project Plan for Screening Site Inspections, PREQB, Superfund PA/SI Division (Revision 8, November 7, 2003)

Sample Containers Decontamination:

Prior to performing the decontamination of all personnel, clothing, and equipment entering into the Contamination Reduction Zone (CRZ), the sample containers will be received by the decontamination personnel. The sample decontamination procedure will consist of a smooth scrubbing of the outside of the container with soapy water containing a low phosphate detergent (e.g. Alconox) followed by a tap or potable water rinse. When biological agents are suspected, add chlorine up to 20% to the soapy water. The sample container will be dried with paper towels. Immediately after the sample containers are decontaminated and dry, they will be relinquished to the Sample Management Officer (SMO).

Personnel Decontamination:

All personnel performing the decontamination will wear the same PPE or the next lower level of protection of the personnel entering and leaving the site in order to avoid exposing themselves to contamination. The personnel decontamination procedures will mainly consist of the physical removal of contaminants by scrubbing with soapy water containing a low phosphate detergent (e. g. Alconox) followed by a tap or potable water rinse. When biological agents are suspected, add chlorine up to 20% to the soapy water. All chemical protective clothing (except for the Level A-fully encapsulating suit and the barricade suit) will be discarded along with used gloves, tape, aluminum foil and other disposable items after decontamination procedures are done.

In summary, after properly decontaminating the field personnel, the protective equipment for Levels A, B, and C of personnel protection will be removed in the following order:

	LEVEL A	LEVEL B	LEVEL C
1	Tape	Tape	Tape
2	Boot cover	Boot cover	Boot cover
3	Safety boots	Outer gloves	Outer gloves
4	Outer gloves	*SCBA tank / backpack	Chemical protective suit
5	Fully encapsulating suit	Chemical protective suit	Face piece
6	*SCBA tank / backpack	Face piece	Inner gloves
7	Face piece	Inner gloves	
8	Inner gloves		

*** self-contained breathing apparatus**

After performing background sample collection activities only or when wearing Level D PPE, a dry decon may be performed instead of washing with a low phosphate detergent (e. g. Alconox) and rinsing with tap water. After the initial recon and between sample locations, the over boots and outer gloves (i.e. latex gloves) will be removed and replaced after completing each background sampling point. The discarded protective equipment will be appropriately disposed of in waste bags. In addition, if outer clothing (e.g.Tyvek) is used and becomes accidentally torn or ripped during the sampling activities, it will be removed and disposed in a waste bag and replaced before sampling at another location.

Sampling Equipment Decontamination:

Whenever possible, only disposable equipment will be used. All non-disposable stainless steel or carbon steel equipment involved in field sampling activities will be decontaminated prior to and subsequent to any sampling activity. Decontamination of sampling equipment will be kept to a minimum in the field and, whenever possible, dedicated sampling equipment will be used.

Decontamination of stainless steel or carbon steel sampling equipment, including hand augers, split-spoons, scoopulas, spoons, trowels and bailers, and others will be conducted as follows:

1. Wash and scrub with soapy water containing a low phosphate detergent (e. g. Alconox).
2. Rinse with tap potable water.
3. A **10% nitric acid rinse** (ultra pure grade) when sampling for **inorganic substances**. If **carbon steel** utensils are used, they will be rinsed with a **1% nitric acid** solution to avoid the stripping of metals.
4. Rinse with tap potable water. *
5. **Methanol** rinse followed by **hexane rinse** (solvents are pesticide grade or better) for equipment involved in the sampling of **organic substances**.
6. **Methanol rinse** (pesticide grade).
7. Analyte free-water rinse. *

8. Air dry (sufficient time will be allowed for the equipment to completely dry).

9. Wrap or cover the decontaminated sampling equipment with aluminum foil for transport and handling.

* **The volume of water used must be at least five times the volume of the solvent or solution used in the preceding step.**

Disposal Procedure for Investigation Derived Materials: See details on Attachment C of this Work Plan.

Ionizing Radiation: Normal Background depends on the specific study area. If less than 1 mR/hr, continue investigation with caution. If greater than 1 mR/hr, evacuate site.

SITE OPERATING PROCEDURES SAFETY GUIDELINES

1. Always observe the buddy system. Never enter or exit a site alone and never work alone in an isolated area. Never wander off by yourself.
2. Always maintain line-of-sight.
3. Practice contamination avoidance. Never sit down or kneel, never lay equipment on the ground, avoid obvious sources of contamination such as puddles, and avoid unnecessary contact with onsite objects.
4. No eating, drinking, or smoking outside the designated "clean" zone.
5. In the event that Personal Protective Equipment (PPE) is ripped or torn, work shall stop, worker decontaminated, and PPE removed and replaced as soon as possible.
6. Be alert to any unusual changes in your own condition; never ignore warning signs. Notify Site Safety Officer of suspected exposures or accidents.
7. A vehicle will be readily available exclusively for emergency use. All PREQB personnel going on site shall be familiar with the most direct route to the nearest hospital (which is already described on Figure 1, page A–40 of this Work Plan).
8. In the event of direct skin contact with the environmental media or a contaminant, the affected area shall be washed immediately with soap and water (unless the contaminant is known to react with water).
9. Copies of the health and safety plan shall be readily accessible at the command post.
10. Note wind direction. Personnel shall remain upwind whenever possible during onsite activities.
11. Never climb over or under refuse or obstacles. Use safety harness/safety lines when sampling lagoons, stream beds, and ravines with steep banks.
12. Hands and face must be thoroughly washed before eating, drinking, or touching mouth, nose or eyes.
13. The Regional Health and Safety Manager (RHSM) designee MUST approve any modification to this safety plan.

OFF SITE SAMPLING ACTIVITIES

Off site activities delineated within the scope of this Site Safety Plan (SSP) will be conducted:

☑ **Yes** ☐ **No.**

If yes, will it affect any of the following areas:

☐ **Emergency contact information.**

☐ **Directions to hospital.**

☐ **Decontamination Procedures.**

☐ **Other:** _____

Attach pages to describe required modification for off-site activities.

Confined Space Entry:

☑ **No attempt will be made to enter abandoned buildings, manholes, tanks, or any other confined areas.**

☐ **Confined space entry will be made into the following** _____

Medical Surveillance:

☐ No site-specific medical surveillance is required for this task.

☑ **Medical surveillance will be as follows**: Due to the hot and humid climate conditions in Puerto Rico, personnel will be monitored for heat stress. Periodical checks of body temperature, heart rate, and physical indicators will be taken and observed by the SSO.

Personnel Monitoring:

☑ Personnel monitoring will include only the use of the Direct-Reading Radiation Monitor (Dosimeter). No further personnel monitoring are required.

☐ Personnel monitoring will also consist of: _____

EMERGENCY SITUATIONS

Air Releases or Fire/Explosion:

In the event of an unexpected air release or fire/explosion, all onsite personnel will gather at a previously designated area located upwind. The Site Safety Officer (SSO) will then account for all personnel and notify the proper emergency agencies.

In the event the SSO is unavailable, the Site Manager will assume these responsibilities.

Emergency Site Control:

In the event of an emergency, the SSO will discourage any unauthorized personnel from entering the site. If necessary, the SSO will inform the proper authorities.

Personnel Injury:

If onsite personnel require emergency medical attention, the following steps will be taken:

1) Evaluate the nature of the injury.
2) Decontaminate to the extent possible prior to providing first aid or transportation to emergency facilities.
3) The SSO or the Site Manager will call or notify the proper authorities.

First Aid Procedures:

Skin Contact: Remove contaminated clothing. Wash immediately with soap (if available) and water. If substance is known to react with water, cover with clean piece of cloth or gauze.

Inhalation: Remove from contaminated to clean air atmosphere. Provide supplied air, oxygen or artificial respiration, if necessary. Transport to hospital.

Ingestion: Never induce vomiting, especially when acids, alkalis, or petroleum products are suspected. The SSO or the Site Manager will call the Poison Control Center immediately and inform the proper authorities.

Equipment Failure: In the event that air-monitoring equipment fails to operate, all personnel will exit the site immediately and notify the Regional Health and Safety Manager (RHSM) or designee for further instructions.

Preventing Heat Stress:

Most heat-related health problems can be prevented or the risk of developing them reduced by following a few basic precautions or procedures. These are:

1. **Acclimatization** to the heat through short exposures followed by longer periods of work in the hot environment can provide resistance to heat stress. New employees and workers returning from an absence of two weeks or more should have a 5-day period of acclimatization. This period should begin with 50 percent of the normal workload and normal work times the first day and gradually build up to 100 percent on the fifth day.

2. A variety of **engineering controls,** including ventilation and spot cooling at points of high heat production, may be helpful to reduce heat stress. Shielding is required as protection from radiant heat sources. Cooling through evaporation and mechanical refrigeration are other ways to reduce heat. Cooling fans can also reduce heat in hot conditions. Eliminating steam leaks will also help. Equipment modifications, the use of power tools to reduce manual labor and using personal cooling devices or protective clothing are other ways to reduce heat exposure for workers.

3. **Work practices** such as providing a period of acclimatization for new workers and those returning from two weeks absences and providing plenty of drinking water (as much as a quart per worker per hour available at the workplace) can help reduce the risk of heat disorders. Employers should also consider individual workers physical conditions when

determining their fitness for working in hot environments. Older workers, obese workers, and personnel taking some types of medication are at greater risk of adverse health effects when working in hot environments. Alternating work and rest periods with longer rest in a cool shaded area can help workers avoid heat stress. If possible, heavy work should be scheduled during the early morning and appropriate protective clothing provided.

4. **Employee education** is vital so that workers are aware of the need and importance of drinking plenty of fluids, which are lost through sweat, and can recognize the symptoms of dehydration, exhaustion, fainting, heat cramps, heat stress, and heat stroke. The Site Manager and the SSO should also be trained to detect early signs of heat related problems and should allow workers to interrupt their work if they are uncomfortable.

Heat stress causes body reactions:

Four environmental factors--temperature, humidity, radiant heat (such as from the sun or a furnace), and air velocity affect the amount of stress a worker faces in a hot work area. Perhaps most important to the level of stress an individual faces are personal characteristics such as age, weight, fitness, medical condition, and acclimatization to the heat.

The body reacts to high external temperature by circulating blood to the skin, which increases skin temperature and allows the body to give off its excess heat through the skin. However, if the muscles are being used for physical labor, less blood is available to flow to the skin and release the heat.

Sweating is another means the body uses to maintain a stable internal body temperature. However, sweating is effective only if the humidity level is low enough to permit evaporation and if the fluids and salts lost are adequately replaced. In Puerto Rico, however, relatively high humidity tends to occur most of the year, making the evaporation process slow and less efficient.

A person can take some steps to reduce the risk of heat stress by moving to a cooler or shadowed place, reducing the work pace or load, and by removing or loosening some clothing.

If the body cannot dispose of excess heat, it will store it. When this happens, the body's core temperature rises and the heart rate increases. As the body continues to store heat, the individual begins to lose concentration and has difficulty focusing on a task, may become irritable or sick and often loses the desire to drink. The next stage is most often fainting and possible death, if the person is not removed from the hot environment.

Heat disorders:

1. **Heat stroke**, the most serious health problem for workers in hot environments is caused by the failure of the body's internal mechanism to regulate its core temperature. Sweating stops and the body can no longer rid itself of excess heat. Signs include (1) mental confusion, delirium, loss of consciousness, convulsions or coma; (2) a body temperature of 106 ° F or higher; and (3) hot dry skin which may be red, mottled or bluish. Victims of heat stroke will die unless treated promptly. While medical help should be called, the victim must be removed immediately to a cool area and his or her clothing soaked with cool water. He or she should be fanned vigorously to increase cooling. Prompt first aid can prevent permanent injury to the brain and other vital organs.

2. **Heat exhaustion** develops as a result of loss of fluids through sweating when a worker has failed to drink enough fluids or take in enough salt or both. The worker with heat exhaustion still sweats, but experiences extreme weakness or fatigue, giddiness, nausea or headache. The skin is clammy and moist, the complexion pale or flushed and the body temperature normal or slightly higher. Treatment is usually simple: the victim should rest in a cool place and drink salted liquids. Severe cases involving victims who vomit or lose consciousness may require longer treatment under medical supervision.

3. **Heat cramps**, painful spasms of the bone muscles, are caused when workers drink large quantities of water but fail to replace their body's salt loss. Tired muscles used for performing the work are usually the ones most susceptible to cramps. Cramps may occur

during or after working hours and may be relieved by taking salted liquids by mouth or saline solutions intravenously for quicker relief, if medically determined to be required.

4. **Fainting** may be a problem for the worker unacclimatized to a hot environment that simply stands still in the heat. Victims usually recover quickly after a brief period of lying down. Moving around rather than standing still will usually reduce the possibility of fainting.

5. **Heat rash**, also known as prickly heat, may occur in hot and humid environments where sweat is not easily removed from the surface of the skin by evaporation. When extensive or complicated by infection, heat rash can be so uncomfortable that it inhibits sleep and impairs a worker's performance or even results in temporary disability. Heat rash can be prevented by resting in a cool place and allowing the skin to dry.

Communication Procedures:

Horn blast or a siren are the emergency signals to indicate that all personnel should leave the Exclusion Zone.

The following standard hand signals will be used in case of failure of radio communications:

Hand(s) gripping throat	**Out of air, can't breathe**
Grip partner's wrist or both hands around waist	**Leave area immediately**
Hands on top of head	**Need assistance**
Thumbs up	**OK, I am all right, I understand**
Thumbs down	**No, negative**

Radio Communication:

Channel 1 has been designated as the radio frequency for all personnel. Telephone communication to the Command Post should be established as soon as possible. The phone number is (787) 501-2661.

EMERGENCY INFORMATION

LOCAL RESOURCES:

Ambulance (Name): Medical Emergencies .....Phone **(787) 636-7515**
(787) 292-3360
(787) 292-3380

Hospital (Name): Pavía Hospital. .....Phone **(787) 754-0909**

Police (Local or State): **Emergency** .....Phone **(787) 343-2020**
or **911**

Fire Department:San Juan Metropolitan Area .....Phone **(787) 343-2330**

Radio Channel: **Scanning** .....**Scanning**

Nearest Phone: **PREQB Superfund Cellular Phone** .....Phone **(787) 501-2661**

PR Emergency Management Agency (PREMA):San Juan,PR ..... Phone **(787)-724-0124**

OFFICE RESOURCES:

PREQB Sampling Team Office .....Phone **(787) 766-2823;**
764-8824; 767-8181,
exts. 2241, 2244.

Amy Brochu - ACTING EPA RPO .....Phone **(201) 906-6802**

Heather Baver-SMO RAS Coordinator .....Phone **(703) 264-9348**

Jennifer Feranda CLP Project Officer/RSCC .....Phone **(732) 906-6161**

Juan Dávila – Project Manager .....Phone **(212) 637-4341**

Mr. Juan J. Babá Peebles
Emergency Response and Superfund Program Director.....Phone **(787) 766-2823**

EMERGENCY CONTACTS: (Medical and Health)

Poison Control Center .....Phone **(787) 726-5674**
1-800-222-1222

Chemical Transportation Emergency Center (CHEMTREC) .....Phone **1-800-424-9300**

DIRECTIONS TO HOSPITAL: (Include approximated distance, all routes from different locations, and attach map).

Hospital Information:

Name & Address:

Pavía Hospital
435 Ponce de León Avenue,
Hato Rey P.R. 00918

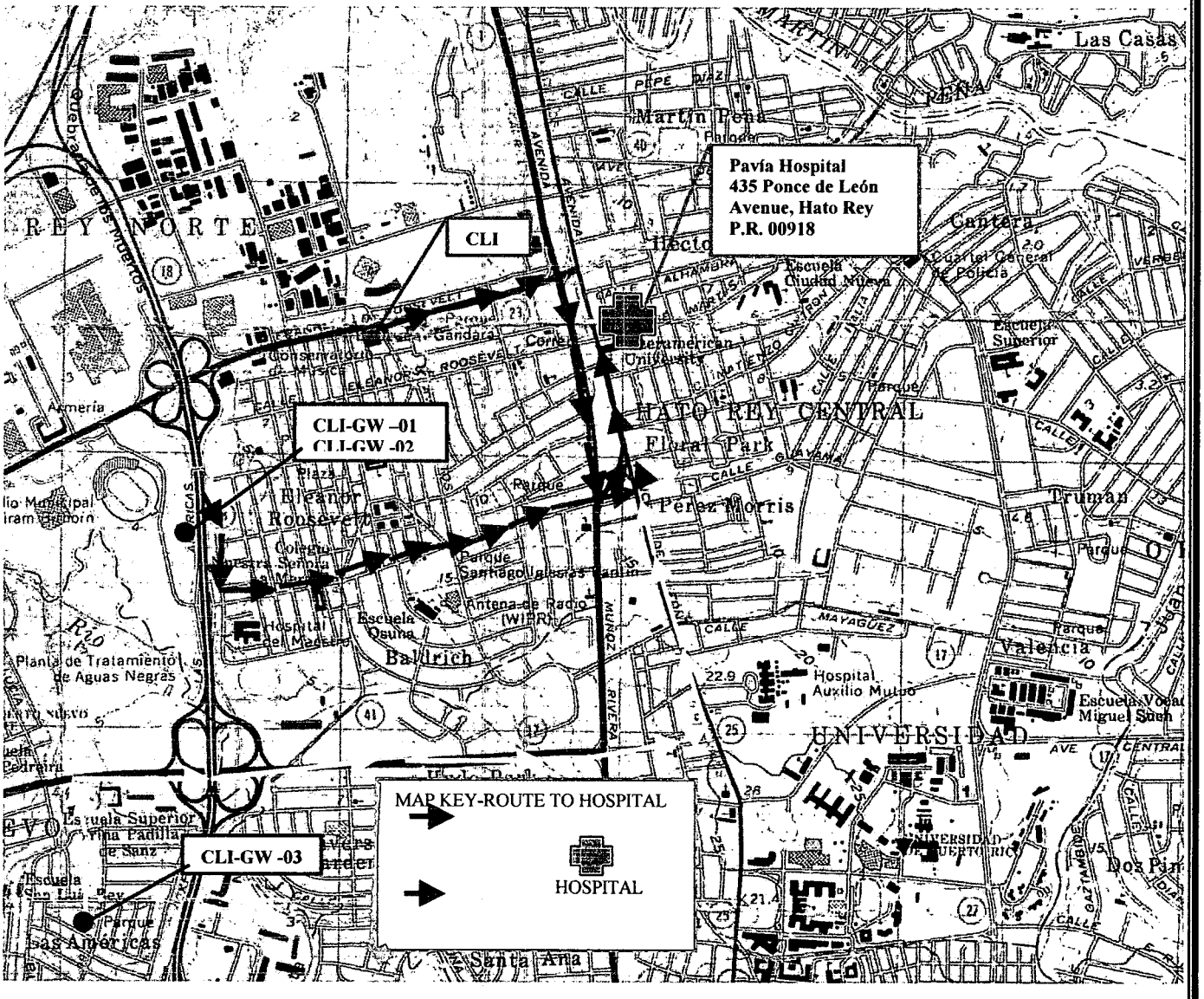
Route to Hospital from site:

Drive east into the Eleanor Roosevelt Street, then turn south into the Muñoz Rivera Avenue, turn east into the Guayama Street and turn north into the Ponce de León Avenue. The Pavía Hospital is located to the right on 435 Ponce de León Avenue in Hato Rey. From sampling point CLI-GW-01: drive south on Juan Street until the Manuel Domenech Street is reached, then continue driving east until the Ponce de León Avenue is reached, then drive north and follow the address mentioned above. From sampling point CLI-GW-03: drive north on Andalucía Street until the Jesús T. Piñero Avenue is reached. Once on the Jesús T. Piñero Avenue, drive east until the Ponce de León Avenue is reached, then drive north until the Pavía Hospital is reached.

(SEE ATTACHED MAP WITH DIRECTIONS TO THE HOSPITAL)

FIGURE 1: MAP OF THE ROUTES FROM CLI AND SOME SAMPLING POINTS TO HOSPITAL

CELIA'S LAUNDRY
247 ELEANOR ROOSEVELT STREET
SAN JUAN, PUERTO RICO



NOT TO SCALE

FIGURE 1: MAP OF THE ROUTE FROM CLI AND SOME SAMPLING POINTS TO HOSPITAL

EMERGENCY PHYSICIAN ACCESS PLAN

PREQB, SUPERFUND PROGRAM, PA/SI Division

A. Monday through Friday, 8:00 am - 4:30 pm, dial (787) 764-8824. When answered state that:

(1) you are an Environmental Quality Board employee

(2) this is an emergency call.

(3) describe the nature of the emergency.

B. Situations on which an employee requires immediate transportation to a hospital: If the situation is life-threatening (e.g., cardiac arrest or person not breathing), call the emergency medical services system and transport the person to the nearest hospital with advanced life support capabilities. After obtaining assistance as stated above, call the (787) 764-8824 number and follow the procedures in **A** as appropriate.

FIELD CHEMICAL CHECKLIST

- ☐ **Acetone**
- ☑ **Alconox**
- ☑ **Ascorbic acid**
- ☐ **Benzene**
- ☑ **Buffer solutions**
- ☑ **Conductivity standard**
- ☐ **Cupric sulfate**
- ☐ **Ferrous ammonium sulfate**
- ☑ **Gasoline**
- ☑ **Hexane**
- ☑ **Hydrochloric acid**
- ☑ **Isopropyl alcohol**
- ☑ **Methanol**
- ☐ **Methylene chloride**
- ☑ **Nitric acid**
- ☐ **Phosphoric acid**
- ☐ **Potassium iodide**
- ☑ **Sodium hydroxide**
- ☐ **Sulfuric acid**
- ☐ **Toluene**
- ☐ **1,1,1-trichloroethane**
- ☐ **Trichloroethylene**

Gases:

- ☐ **Hydrogen sulfide**
- ☑ **Isobutylene**
- ☑ **Methane**
- ☐ **Nitrogen**
- ☑ **Hydrogen**
- ☑ **Zero gas**

ATTACHMENT B

SAMPLING PLAN

PUERTO RICO ENVIRONMENTAL QUALITY BOARD
SUPERFUND PA/SI DIVISION
REGION II

SAMPLING PLAN

FOR THE

CELIA'S LAUNDRY, INC.

LOCATED IN

247 Eleanor Roosevelt Street, San Juan, PR

Prepared by:	Miriam Ortiz Torres Site Manager	Date: 04/12/04
Revised by:	Miguel A. Maldonado Negrón Superfund PA/SI Division Chief	Date: April 16, 2004
PREQB Office Representative:	Juan J. Babá Peebles Emergency Response and Superfund Program Director	Date: APRIL 26, 2004
USEPA Approvals:	Eng. Juan E. Dávila Project Manager	Date: 5/10/04

OBJECTIVE:

The United States Environmental Protection Agency (U.S. EPA) has tasked the Puerto Rico Environmental Quality Board (PREQB) Sampling Team to conduct a Site Inspection (SI) at the facility of Celia's Laundry, Inc. (CLI) located on #247 Eleanor Roosevelt Street, San Juan Puerto Rico 00917.

BACKGROUND INFORMATION

Celia's Laundry, Inc. (CLI) is located on the first floor of a two (2) stories building that is to the north of Eleanor Roosevelt Street and is surrounded by other commercial facilities. There is a residential apartment on the second floor. There are three (3) concrete buildings on the eastern, western, and northern sides of the property and there are no daycare centers or schools within 200 feet from the site. The site is rectangular in shape and consist of a concrete-covered parking area to the south, one concrete-covered area to the west of and besides the CLI building, another small concrete-covered area to the north and besides the CLI building, and a large area with exposed soil also to the north of the CLI building. This large area of exposed soil is in the backyard of the property and has small areas covered with vegetation or gravel (Figure 2).

Inside the CLI building there is a reception area, two large halls where the regular machine wash, drying, and ironing of clothing is performed, and a dry-cleaning area. The dry-cleaning area is in a room on the northern side of the building that opens into the property backyard. This room is covered by a metal roof and consists of a concrete platform with a primary containment system (i.e. ditch). The primary containment system is below the dry-cleaning machine and consists of a ditch covered by a metal screen, and was designed to collect any tetrachloroethylene accidentally released from the machine. All the solvent collected inside the ditch is then pumped back into a 55-gallon metal drum that is constantly connected to the dry-cleaning machine for reuse. Both the dry-cleaning machine and the 55-gallon drum are kept above the primary containment system. No secondary containment system exists at the site that will prevent any tetrachloroethylene accidentally released from this primary containment system from reaching the area of exposed soil in the backyard. The fact that there is a concrete ramp next to the primary containment system, which reaches the exposed soil in the backyard, may increase risk of any chemical from reaching the ground surface.

CLI have been engaged in the dry-cleaning, machine washing, drying, and ironing of clothing since 1978. Tailoring is also performed at the site. According to Mrs. Celia Aristy, Manager of CLI, Mrs. Noemí López, who also lives on the second floor, owns the property. Currently there are 10 employees working on site. CLI has an updated PREQB air emission permit (PFE-65-0101-0019-I-II-0) to operate a dry-cleaning machine, a boiler, and two electric dryers. The rinse water from the washing machines is discarded directly into the Puerto Rico Aqueduct and Sewers Authority (PRASA) sewer system.

The dry-cleaning process is performed using tetrachloroethylene (UN 1897). During an Off/On Site Reconnaissance performed on November 29, 2001, five corroded, 55-gallon metal drums were observed on the backyard of the property (northern side). Two of these drums were labeled as containing tetrachloroethylene and were located over an uncovered, outdoor concrete platform with no containment system. To the north and besides these two drums, there was another corroded drum, also labeled as containing tetrachloroethylene. This drum was partially buried directly into the ground, laying on its side and located over the exposed soil area on the backyard (Figure 2). In the area of exposed soil on the backyard, two additional corroded metal 55-gallon drums were observed next to and to the north of the three drums containing tetrachloroethylene. These drums were also partially buried directly into the ground and laying on their side (Figure 2). According to Mrs. Aristy, these drums were previously used to store kerosene. One of these drums was over the gravel area while the other was over the exposed soil (Figure 2)

Within a 4-mile radius from the site there are twenty-seven (27) PRASA drinking water wells. Two of these wells are within a 2-mile radius, are downgradient (Pozo Truman and Pozo Miguel Such), and were closed in 1987 due to contamination with volatile organic compounds (VOC's), including tetrachloroethylene, among others. There are also two other PRASA drinking water wells that are downgradient and within ½ - mile distance from the site (Pozo Extension Roosevelt and Pozo Parque Roosevelt). The fact that tetrachloroethylene is being used at the site for the dry-cleaning process since 1978, that there were four 55-gallon metal drums labeled as containing either tetrachloroethylene or kerosene laying on their side and directly over the ground at the site, and that there are two wells located downgradient from the site closed due to contamination with VOC's (including tetrachloroethylene), CLI represents a threat to other drinking water wells in the area.

SAMPLING STRATEGY: (describe sample location, amount, rationale, type of samples, QA/QC samples etc.)

Soil Samples: A total of nine (9) soil samples, including the duplicate, will be collected during this Site Inspection. Seven (7) onsite samples will be collected in order to determine the type and concentration of hazardous substances for attribution of contaminants, if any. Two (2) samples will be collected as background. The background samples will be collected on areas presumed to be out of the influence of site activities and contamination. At least one combined field rinsate blank will be collected for each day of sampling. For the location and rationale for each sample refer to Table B-1 and Figures 2-4.

Groundwater Samples: Three (3) groundwater samples will be collected during this Site Inspection. Three (3) samples (CLI-GW-01, CLI-GW-02D, CLI-GW-03) including the duplicate, will be collected from two (2) PRASA drinking water wells (Las Americas and Hiram Bithorn) located downgradient and within a 2-mile distance from the site. The MS/MSD sample will also be collected at one of these points for quality control purposes.
Refer to Table B-1 and Figures 2-4 for the description, rationale, and location of these samples.

Quality Assurance/ Quality Control (QA/QC) samples:

Field rinsate blanks will be collected daily by pouring demonstrated analyte free water over a piece of decontaminated sampling equipment (e.g. bowl, bucket or auger) to evaluate potential cross contamination from inadequate decontamination. The frequency of the field rinsate blank collection is one per decontamination event per type of equipment (e.g. bowl bucket or auger), not to exceed more than one per day. The field rinsate blanks will consist of the same number and type of containers as their original aqueous samples. Sample preservation will be as for all aqueous samples and as indicated in Sections 3.5.3 and 3.5.4 of the approved PREQB Superfund PA/SI QAAP for SSI (Revision 8, November 7, 2003). Field rinsate blanks will be taken at the beginning of each

No upgradient
Wells.

No gw well closer
To the site

sampling day for all parameters of interest (excluding physical parameters) and shipped with the samples taken during that specific day.

Field trip blanks will be prepared at the rate of one (1) per each day, when volatile organics in an aqueous matrix are being collected. Trip Blanks will be collected at the rate of one (1) per cooler per each day of organic sampling. Analyte free water blanks will be collected prior to the sampling event and separately, whenever a new lot of demonstrated analyte free water is used for a sampling event. The same demonstrated analyte free water utilized for the trip and field blanks will be used to collected this blank. This blank will be analyzed for CLP TCL/TAL parameters. The analyte free water blanks will consist of the same number and type of containers of an aqueous sample.

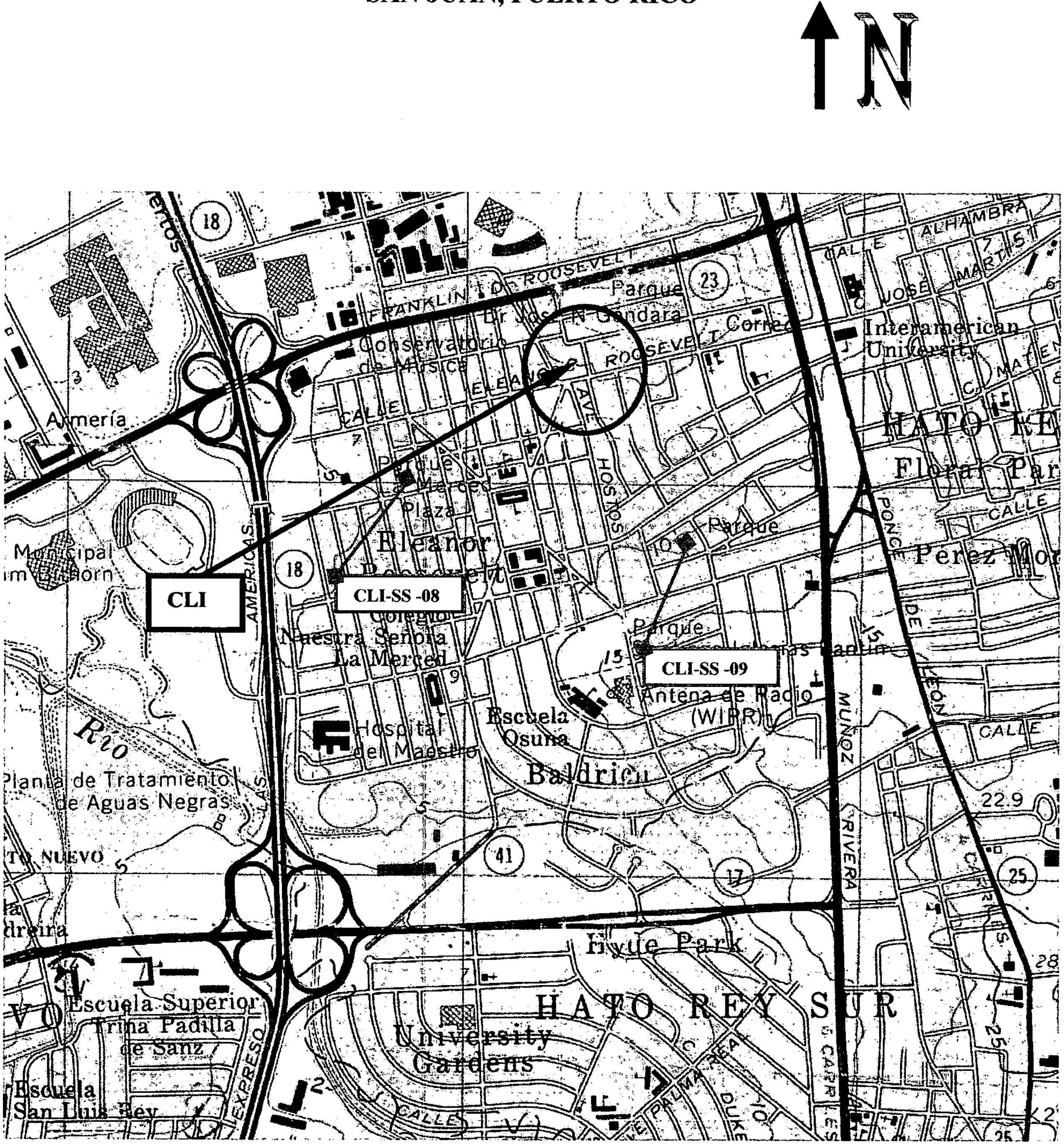
Additional Information on Sampling Strategy:

Continuous air monitoring will be conducted during all sampling activities using an FID and a PID (i.e. Foxboro TVA 1000B). Only grab samples will be taken during the sampling activities. All samples will be analyzed for Target Compound List (TCL) and Target Analyte List (TAL) contaminants, including cyanide. For a description and purpose of the samples, refer to Table B-1.

CELIA'S LAUNDRY, INC.
247 ELEANOR ROOSEVELT STREET, SAN JUAN, PR

FIGURE 2: SAMPLING POINTS LOCATION MAP I

SITE LOCATION MAP
CELIA'S LAUNDRY
247 ELEANOR ROOSEVELT STREET
SAN JUAN, PUERTO RICO



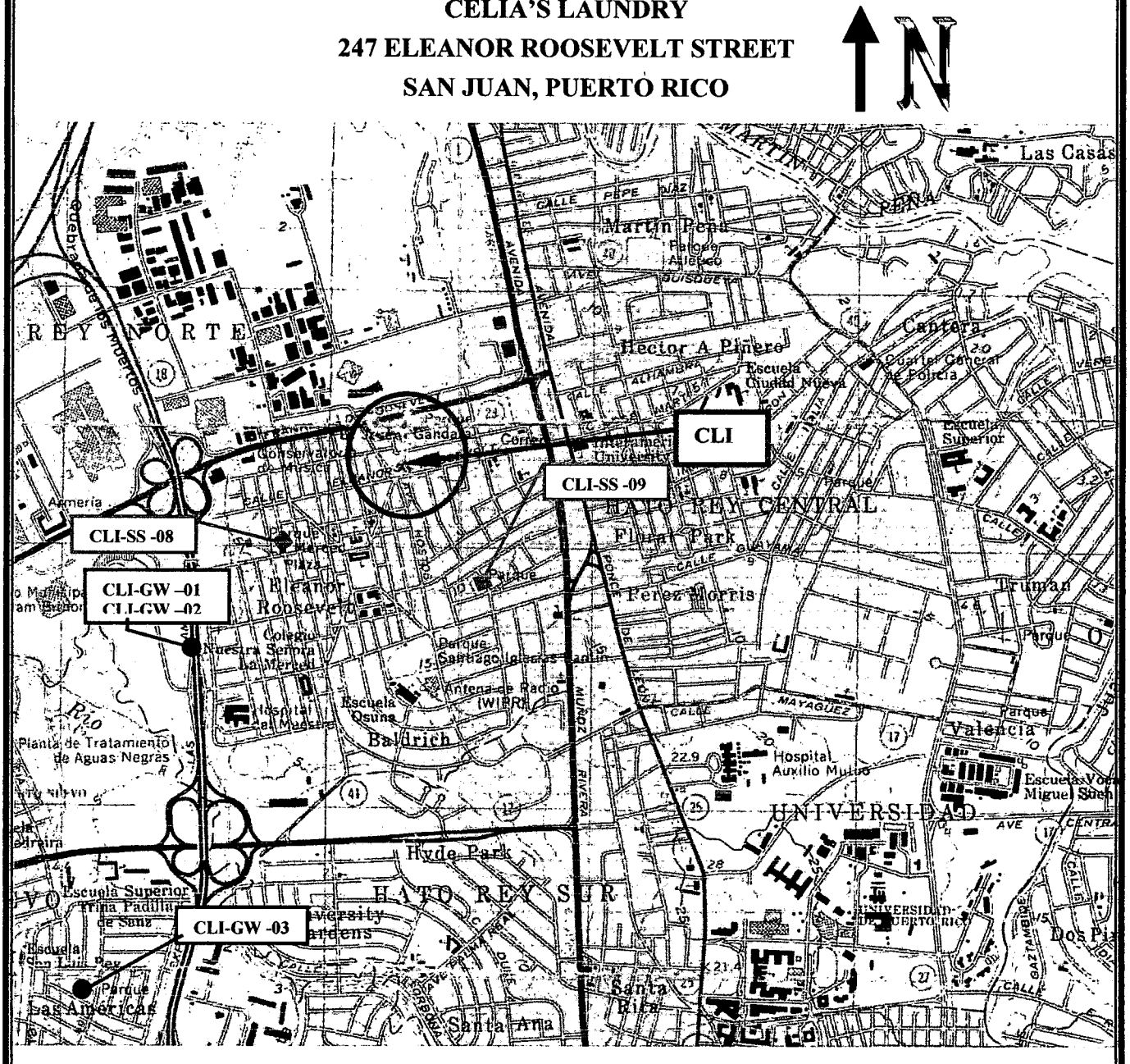
NOT TO SCALE

FIGURE 2

CELIA'S LAUNDRY, INC.
247 ELEANOR ROOSEVELT STREET, SAN JUAN, PR

FIGURE 3: SAMPLING POINTS LOCATION MAP II

CELIA'S LAUNDRY
247 ELEANOR ROOSEVELT STREET
SAN JUAN, PUERTO RICO

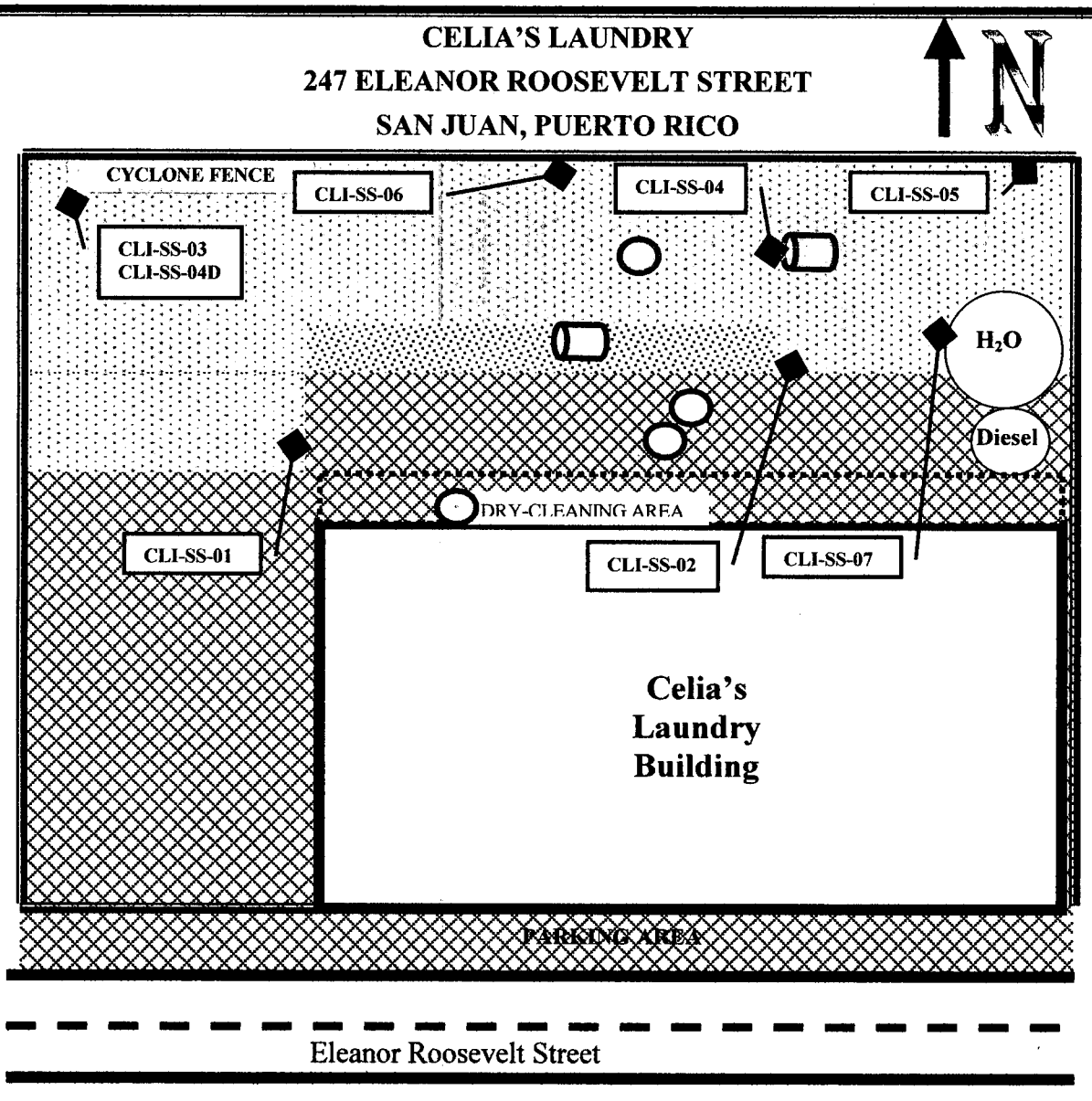


NOT TO SCALE

FIGURE 3: SAMPLING LOCATION MAP II

CELIA'S LAUNDRY, INC.
247 ELEANOR ROOSEVELT STREET, SAN JUAN, PR

FIGURE 4: SAMPLING POINTS LOCATION MAP III



(NOT TO SCALE)

FIGURE 4: SITE SKETCH

TABLE B-1: SAMPLES DESCRIPTION

Matrix	Sample Number	Description
SURFACE SOIL	*CLI-SS-01*	Grab sample to be collected on site from an area of exposed soil located adjacent and to the north of a concrete platform on the west side of the site. This sample will be collected at a depth of 0-3 feet to determine type and concentration of contaminants.
	CLI-SS-02	Grab sample to be collected on site from an area of expose soil to the northeast of an outdoors area covered with concrete of where 55-gallon metal drums containing tetrachloroethylene were previously observed.
	CLI-SS-03	Grab sample to be collected on site from an exposed soil on the northwestern corner of CLI's backyard. This sample will be collected from a depth of 0-3 feet and will be used to determine type, concentration, and possible migration of contaminants.
	CLI-SS-04	Duplicate of sample CLI-SS-03.
	CLI-SS-05	Grab sample to be collected on site from an area of exposed soil on the northeastern corner of the CLI's backyard. This sample will be collected from a depth of 0-3 feet and will be used to determine type, concentration and possible migration of contaminants.
	CLI-SS-06	Grab sample to be collected from an area of exposed soil located halfway between sampling points CLI-SS-05 and CLI-SS 06 and on the northern side of CLI's backyard. This sample will be collected from a depth of 0-3 feet and will be used to determine type, concentration, and possible migration of contaminants.
	CLI-SS-07	Grab sample to be collected from an area of exposed soil located in the southeast corner of CLI's backyard. This sample will be collected from a depth of 0-3 feet and will be used to determine type, concentration, and possible migration of contaminants.
	CLI-SS-08	Grab background sample to be collected offsite from a location to the south and within 0- 1/4-mile distance from the site, and the Matrix Spike/Matrix Spike Duplicate for quality control purposes. This location is presumed to be out of the influence of site activities and contamination. This sample will be collected from a depth of 0-3 feet.
	CLI-SS-09	Grab background sample to be collected offsite from a location to the northeast and within 0- 1/4-mile distance from the site. This locationis presumed to be out of the influence of site activities and contamination. This sample will be collected from a depth of 0-3 feet.

TABLE B-1: SAMPLES DESCRIPTION (CONT.)

Matrix	Sample Number	Description
	CLI-GW-01	Groundwater sample to be collected from the downgradient PRASA drinking water well Hiram Bithorn to determine type, concentration, and possible migration of contaminants from the site to the ground water. This well is located to the southwest of and at approximately 2-mile radius from the site.
	CLI-GW-02D	Duplicate of sample CLI-GW-01.
	CLI-GW-03	Groundwater sample to be collected from a downgradient PRASA drinking water well Las Américas to determine possible migration of contaminants from the site to the groundwater and the Matrix Spike/Matrix Spike Duplicate. This well is located to the southwest of and within 2-mile radius from the site.
BLANKS	*CLI-FB-01*	Field Trip Blank for quality control purposes, when volatile organics in an aqueous matrix are being collected.
	CLI-FRB-01	Field Rinsate Blank for quality control purposes.
	CLI-FRB-02	Field Rinsate Blank for quality control purposes.
	CLI-AFB-01	Analyte Free Water Blank for quality control.
	CLI-TB-01	Trip Blank for quality control. One per cooler per each day of organic sampling.
	CLI-TB-02	Trip Blank for quality control. One per cooler per each day of organic sampling.
	CLI-TB-03	Trip Blank for quality control. One per cooler per each day of organic sampling.
	CLI-TB-04	Trip Blank for quality control. One per cooler per each day of organic sampling.

SAMPLING PROCEDURES

Sampling procedures will be conducted in accordance to Sections 3.5 and 5.2 of the approved "PREQB Superfund PA/SI Division QAPP for SSI" (Revision 8, November 7, 2003). This generic document describes the methods for all field Screening Site Inspection (SSI) operations undertaken by the Superfund PA/SI Division of the Puerto Rico Environmental Quality Board (PREQB) including sample collection and the decontamination procedures to be applied. In order to accurately assess any potential contamination on the site, at least two background samples for each pathway matrix of concern will be collected. The handling, preservation, and analysis of each one of these samples will be equal to those specified for the environmental samples.

Aqueous samples will be collected as follows:

Aqueous samples may be collected from surface water bodies or from drinking or monitoring water wells as per the "PREQB Superfund PA/SI Division QAPP for SSI" (Revision 8, November 7, 2003).

Surface water sampling will be performed according to Section 3.5.4 of "PREQB Superfund PA/SI Division QAPP for SSI" (Revision 8, November 7, 2003). The samples should be collected starting with the downstream location first, moving in an upstream direction until all the samples are collected, and prior to taking the sediment samples. Surface water samples will be obtained using sample bottles, clean plastic disposable beakers, or decontaminated stainless steel buckets. A surface water sample may be collected from a drainage pathway off site.

Monitoring well sampling will be performed according to Section 3.5.2 of the "PREQB Superfund PA/SI Division QAPP for SSI" (Revision 8, November 7, 2003). Collection of ground water samples from on-site and off-site monitoring wells will be performed using Teflon bailers or an adjustable rate, positive displacement pump (e. g. bladder, peristaltic or centrifugal pump). Prior to sample, the monitoring well must be purged until indicator parameters such as pH, temperature, and specific conductance are observed to vary less than 10 % after the removal of two consecutive well volumes. For high yield wells evacuation of at least 3-5 volumes is required. Purged well must be sampled within 3 hours after purged.

Drinking water wells sampling will be performed according to Section 3.5.3 of the "PREQB Superfund PA/SI Division QAPP for SSI" (Revision 8, November 7, 2003). If water treatment systems are in use, samples will be obtained before the treatment device (e.g. chlorination) as well as before any aerator device, garden hose or other attachments. If this is not possible, the exact type of treatment system being used at each location must be recorded in the field logbook. If the volume of water to be purged cannot be determined, the well will be evacuated for a minimum of 15 minutes. If the volume can be calculated, a minimum of three to five well volumes should be purged unless the well is in continuous use. If the well is used for industrial production, the pumping rate should be noted and the well purged for 15 minutes. An outside faucet can be used for purging. Tap water samples will be collected directly into the sample bottles. If there is reason to suspect that the water supply well is chlorinated, a field test kit will be used to assess the presence of residual chlorine. If chlorine is detected, 0.008% sodium thiosulfate will be added to the sample bottles.

For all aqueous samples, the volatile organic fraction (VOA) will be collected first in two 40-ml glass vials, then the extractable organic fraction (semi-volatiles and pesticides/PCBs) will be collected in two 80-oz amber bottles. Two 1-liter, wide mouth polyethylene bottle will be used to collect the total metals and cyanide inorganic fractions, beginning with the total metals fraction (Table B-2).

For all the aqueous samples the preservation procedure shall be according to Table B-2 of this workplan. The VOA fraction must be bubble free and acidified to a pH less than 2 (pH<2). Prior to collecting the VOA fraction, the amount of HCl preservative needed to adjust the pH of the sample to less than 2 (pH<2) will be determined. When collecting the VOA fraction, each sample bottle will be filled to the lower portion of the neck and then the pre-determined amount of HCl preservative will be added. After the addition of the preservative, the sample will be completely filled to just overflowing so that no air bubbles are entrapped inside when putting the lid back on. This procedure will be duplicated at each new sampling station or location. For other parameters fill each sample container and preserve immediately as required in Table B-2.

If Cyanide (CN^-) samples are taken:

- Test a drop of sample with potassium iodide-starch test paper (KI-starch paper). A resulting blue color indicates the presence of **oxidizing agents** (e.g. Cl) and hence, the need for treatment. Add **ascorbic acid**, a few crystals at a time, until a drop of sample produces no color on the indicator paper. Then add an additional 0.6 g of ascorbic acid for each liter of sample volume.

- Test a drop of sample on lead acetate paper moistened with acetic acid buffer solution. Darkening of the paper indicates the presence of **sulfides** (S_2). If sulfides are present, add powdered **cadmium carbonate** until a drop of the treated solution does not darken the lead acetate test paper.

- **Preserve** samples with a solution of 10 N **sodium hydroxide** (NaOH) per liter of sample. Add NaOH until the pH of the sample is higher than 12 (pH>12).

No chemical preservation is required for medium level water samples or for low/medium level soil samples unless otherwise directed. To test for pH, pour a minimal portion of sample onto broad range pH paper to verify if the appropriate pH level has been obtained.

After collection, all samples will be placed inside cooler with enough ice to maintain the temperature at 4°C. Samples will be shipped to the designated CLP laboratory within 24 hours from the time of collection.

Soil/sediments samples will be collected as follows:

Surface and shallow subsurface soil (0-3 feet) grab samples will be collected as per Section 3.5.1 of the "PREQB Superfund PA/SI Division QAPP for SSI" (Revision 8, November 7, 2003). Each soil and sediment sample will be collected using dedicated, decontaminated stainless steel trowels, scoopulas, bowls, augers, and other equipment. Sediment samples will be collected immediately after taking the surface water samples, starting with the downstream location first and moving in an upstream direction until all the samples are collected.

For all soil and sediment samples, the volatile organic fraction (VOA) will be collected first, the extractable organic fraction (semi-volatiles and pesticides/PCBs) will be collected second, the inorganic total metal fractions will be collected third, and the inorganic cyanide fraction will be collected last. The VOA fraction will be collected directly into two 40-ml glass vials or three 5 gram EnCore samplers and one 4–oz wide mouth glass jar. When collecting the extractable organic (semi-volatiles and pesticides/PCBs) and inorganic fractions (total metals and cyanide) of each sample, the soil or sediment will be homogenized before it is placed in the appropriate sample container. Three 8-oz wide mouth glass jars will be used to collect the extractable organic fraction, the total metals fraction, and the cyanide fraction of each sample (Table B-2). After collecting the samples, the containers (vials, EnCore samplers, jars) will be placed inside cooler with enough ice to maintain the temperature at 4°C. Samples will be shipped to the designated CLP laboratory within 24 hours from the time of collection.

Specific sampling QA/QC requirements are as follows:

For information regarding the procedure to collect all the QA/QC samples refer to Section 5.2 of the "PREQB Superfund PA/SI Division QAPP for SSI" (Revision 8, November 7, 2003). Field QC samples may include trip blanks, field trip blanks, field rinsate blanks, combined field rinsate blanks, analyte-free water blank, and duplicate samples. The field QC samples will be collected and managed (i.e. preserved, labeled, packaged, and shipped to the assigned laboratory) in a manner identical to the soil and aqueous samples, and should remain "blind" to the laboratory to assure unbiased and reliable results. Each field QC sample receives a separate sample number. The appropriate sample container for each sample duplicate or blank was selected according to Table B-2 of this workplan. For all the aqueous samples the preservation procedure shall be according to Table B-2 of this workplan.

Laboratory QC samples include matrix spikes (MS) and matrix spike duplicates (MSD) for **organic** samples (Target Compound List or **TCL**) and matrix spikes and sample duplicates for **inorganic** samples (Target Analyte List or **TAL**). One sample per matrix per twenty (20) samples will be designated as "Laboratory QC" sample.

The MS/MSD will be collected to check the accuracy and precision of the organic and inorganic laboratory analyses. These samples will be collected from areas known or suspected to be contaminated and should be collected in the first round of sampling per matrix. The MS/MSD should be sent to the laboratory with the first shipment of samples. The sample and the MS/MSD collected at the same sample location or station number will have the same CLP number. In the USEPA TR/COC Form, the PREQB Superfund PA/SI Division COC Record Sheet, the sample container label, and the field logbook, it will be indicated which samples are the MS/MSD.

When collecting aqueous samples, the MS/MSD will consist of a triple sample volume. The handling, preservation, and analysis will be equal to those specified for the environmental samples (see Table 3). If a disposable volumetric sampler (e.g. En Core® sampler or equivalent) is being used to collect the soil samples, the MS/MSD will consist of three volumetric samplers. On the other hand, when the disposable volumetric sampler (e.g. En Core® sampler or equivalent) is not available and 40-ml glass vials are used to collect the VOA fraction, the MS/MSD will consist of triple sample volume (i. e. six vials). These samples will be analyzed for TLC Volatiles only and the handling and preservation will be equal to those specified for the environmental samples (See Table 3).

An environmental duplicate will be collected for both the soil and water matrices at a rate of one duplicate per twenty (20) samples collected. Duplicates consist of the same number and type of containers as their respective original samples. Soil and sediment matrices, for the purposes of the SSI project, are considered to be the same matrix.

A trip blank will be collected in two (2) 40 ml glass vials with Teflon-lined septum caps prior to the initiation of fieldwork each day at a frequency of one per cooler per each day of organic sampling.

Rinsate blanks of three (3) pieces of equipment used (e.g. trowel, bowl, auger) will be collected each day. These also consist of the same number and type of containers as their respective original samples.

One set of aqueous trip blanks, consisting of two (2) 40-ml vials filled with analyte-free water will be prepared and carried by the samplers each day, but only when aqueous samples are taken. Trip blanks are analyzed for VOA's only.

One set of analyte-free water blanks, consisting of the same number and type of containers as the original aqueous samples, will be collected prior to each sampling event. The purpose for collecting this sample is to demonstrate that the analyte-free water used in the sampling events is consistent with the criteria specified in the USEPA Region II, "Quality Assurance Manual", October, 1989.

The analysis of CLP Target Compound List (TCL) Organic Matrix Spike/Matrix Spike Duplicates (MS/MSD) will be collected for aqueous samples only. MS/MSD will consist of three times (3x) the original sample amount, for a total of six (6) 40-ml vials, six (6) 80-oz. amber bottles, and three (3) 1-liter polyethylene bottles, collected in that order. Afterwards, if cyanide aliquots are collected during sampling, three (3) additional 1-liter polyethylene bottles will be collected.

If cyanide (CN^-) and dioxin samples are to be taken, a **1-liter polyethylene bottle** will be used for the **cyanide** analysis sample and an **80-oz amber glass bottle** will be used for the **dioxin** analysis sample.

MS/MSD or three (3) 1-liter polyethylene bottles will be collected only for the cyanide samples. The following guidelines should also be utilized for the cyanide aliquot:

* Test a drop of sample with potassium iodide-starch test paper (KI-starch paper). A resulting blue color indicates the presence of **oxidizing agents** (e.g. Cl) and the need for treatment. Add **ascorbic acid**, a few crystals at a time, until a drop of sample produces no color on the indicator paper. Then add an additional 0.6 g of ascorbic acid for each liter of sample volume.

* Test a drop of sample on lead acetate paper moistened with acetic acid buffer solution. Darkening of the paper indicates the presence of **sulfides** (S_2^-). If sulfides are present, add powdered **cadmium carbonate** until a drop of the treated solution does not darken the lead acetate test paper.

* Preserve samples with a solution of 10 N sodium hydroxide (NaOH) per liter of sample until pH of the sample is higher than 12 (pH>12).

* Store the samples at 4°C until the time of analysis.

No chemical preservation is required for medium level water samples or for low/medium level soil samples unless otherwise directed.

Refer to Table B-1 for a summary of sampling procedures.

Site Name Celia's Laundry, Inc.

Sampling Plan No. 02-0304-36 SP

TABLE B-2: CLP ROUTINE ANALYTICAL SERVICES[1]:

SAMPLE LOCATION (Blanks, GW, SW, SS, SD, WW, etc.)	NUMBER OF SAMPLES	SAMPLE MATRIX (aqueous, sludge soil/sediment)	SAMPLING DEVICE (auger, bowl, ponar dredge, bailer, pan, spoon, other)	SAMPLE PRESERVATION[1]	TECHNICAL HOLDING TIME[1]	CLP LABORATORY ANALYSIS METHODS [2,3,4]	METHOD DETECTION LIMITS
Blanks/GW		AQUEOUS	Two 40-mL glass vials w/Teflon septum caps[5]	HCl to pH < 2 Cool to 4° ∓ 2 ° C	14 days if preserved and 7 days if not preserved, to analysis	TCL VOA's (Volatiles) CLP-M methods-(OLM04.2, OLC02.1), SW-846 Methods (5030, 8260A)	Compound Specific (10-50 ug/l)
Blanks/GW		AQUEOUS	Two 80-oz amber glass bottles with Teflon-lined caps[5]	Cool to 4° ∓ 2 ° C Store in the dark	7 days extract, 40 days analysis	TCL Extractable (semi volatiles) CLP-M methods-(OLM04.2, OLC02.1), SW-846 Methods (3500B, 3520C, 3541, 8270C)	Compound Specific (10-50 ug/l)
Blanks/GW		AQUEOUS	One 1-L Polyethylene bottle[5]	HNO_3 to pH < 2 Cool to 4° ∓ 2 ° C	6 months analysis (28 days for Hg)	TAL Inorganic (total metals) CLP-M methods (ILM 04.1), SW-846 Methods (3010A, 3020A, 3050A, 6020A, 7000 SERIES)	Compound Specific (0.2-5000 ug/l)
Blanks/GW		AQUEOUS	One 1-L Polyethylene bottle	NaOH to pH > 12 Cool to 4° ∓ 2 ° C [6,7]	14 days	TAL Inorganic (cyanide) CLP-M methods (ILM 04.1), SW-846 Methods (9010A, 9012A)	Compound Specific (0.2-5000 ug/l)
Soil/Sediment		SOIL/ SEDIMENT/ SLUDGE	Two 40-mL glass vials w/Teflon septum caps OR	Cool to 4° ∓ 2 ° C	10 days to analysis	TCL VOA's (volatiles) CLP-M methods (OLM04.2), SW-846 Methods (5030, 8260A)	Compound Specific (5-10 ug/kg)
-------			Three 5 g disposable volumetric samplers[8,9,10] One 4-oz. glass bottle, wide mouth	Cool to 4° ∓ 2 ° C	48 hours to analysis if not preserved	TCL VOA's (volatiles) CLP-M methods (OLM04.2), SW-846 Methods (5035, 8260A)	Compound Specific (5-10 ug/kg)
Soil/Sediment			One 8-oz glass bottle, wide mouth	Cool to 4° ∓ 2 ° C Store in dark	7 days extract, 40 days analysis	TCL Extractable (semi volatiles) CLP-M methods (OLM04.2, OLC02.1), SW-846 Methods (3500B, 3520C, 3541, 8270C)	Compound Specific (330-1700 ug/kg)
Soil/Sediment			One 8-oz glass bottle, wide mouth	Cool to 4° ∓ 2 ° C	6 months analysis (28 days for Hg)	TAL Inorganic (total metals) CLP-M methods (ILM 04.1), SW-846 Methods (3010A, 3020A, 3050A, 6020A, 7000 SERIES)	Compound Specific (0.1-1000 mg/kg)
Soil/Sediment			One 8-oz glass bottle, wide mouth	Cool to 4° ∓ 2 ° C	14 days	TAL Inorganic (cyanide) CLP-M methods (ILM 04.1), SW-846 Methods (9010A, 9012A)	Compound Specific (0.1-1000 mg/kg)

1. **Sampler's Guide to the Contract Laboratory Program, EPA/540/R-96/032, 1996.**
2. **US EPA SW-846 Analytical Methods, www.epa.gov/epaoswer/hazwaste/test/under.htm**
3. **Introduction to the Contract Laboratory Program, EPA/540/R-99/004, February 2000.**
4. **EPA Publications: a) 9240.0-33FS, b) 9240.0-32FSA, c) 9240.0-08-FSE, d) 9240.0-09-FSD.**
5. **Triple volume required for TCL organic matrix/matrix spike duplicate.**
6. **Preserve with 0.6 g Ascorbic Acid if oxidizing agents are present, add Cadmium Carbonate is Sulfides (S2-) are present [1].**
7. **Maximum holding time is 24 hours when sulfide is present.**
8. **Sample will be collected with En Core Sampler, a disposable volumetric sample device, En Novative Technologies, Inc.**
9. **USACE Sample Collection and Preparation Strategies for VOC in Solids, October 1998.**
10. **SW-846 Method 5035: Closed System Purge-and-Trap and Extraction for Volatile Organics in Soil and Wastes Samples, December 1996.**

Note: Samples considered medium or high concentrations must be preserved and shipped, according to EPA Region II specifications.

DECONTAMINATION PROCEDURES

The personnel and equipment decontamination procedures will be performed as indicated in the approved "PREQB Superfund PA/SI Division QAPP for SSI" (Revision 8, November 7, 2003). The objective of these procedures is to minimize the risk of exposure to hazardous substances or cross-contamination.

All personnel, clothing, equipment, and samples leaving the contaminated area of a site (the Exclusion Zone) must be decontaminated to remove any harmful chemicals or infectious organisms that may have adhered to them. Decontamination activities will be confined to a designated area within the Contamination Reduction Zone (CRZ), known as the Contamination Reduction Corridor (CRC). See Appendix 15 of the approved "PREQB Superfund PA/SI Division QAPP for SSI" (Revision 8, November 7, 2003).

Sample Containers Decontamination

Prior to performing the decontamination of all personnel, clothing, and equipment entering into the Contamination Reduction Zone (CRZ), the sample containers will be received by the decontamination personnel. The sample decontamination procedure will consist of a smooth scrubbing of the outside of the container with soapy water containing a low phosphate detergent (e. g. Alconox) followed by a tap or potable water rinse. When biological agents are suspected, add chlorine up to 20% to the soapy water. The sample container will be dried with paper towels. Immediately after the sample containers are decontaminated and dry, they will be relinquished to the Sample Management Officer (SMO).

Personnel Decontamination

All personnel performing the decontamination will wear the same PPE or the next lower level of protection of the personnel entering and leaving the site in order to avoid exposing themselves to contamination. The personnel decontamination procedures will mainly consist of the physical removal of contaminants by scrubbing with soapy water containing a low phosphate detergent (e. g. Alconox) followed by a tap or potable water rinse. When biological agents are suspected, add chlorine up to 20% to the soapy water. All chemical protective clothing (except for the Level A-

fully encapsulating suit and the barricade suit) will be discarded along with used gloves, tape, aluminum foil, and other disposable items after the decontamination procedures are done.

For step-by-step procedures for decontamination of personnel wearing PPE Levels A through C refer to Tables A-4 to A-6 (pages A-25 to A-27). After properly decontaminating the field personnel, the protective equipment for Levels A, B, and C of personnel protection will be removed in the following order:

	LEVEL A	LEVEL B	LEVEL C
1	Tape	Tape	Tape
2	Boot cover	Boot cover	Boot cover
3	Safety boots	Outer gloves	Outer gloves
4	Outer gloves	*SCBA tank / backpack	Chemical protective suit
5	Fully encapsulating suit	Chemical protective suit	Face piece
6	*SCBA tank / backpack	Face piece	Inner gloves
7	Face piece	Inner gloves	
8	Inner gloves		

*** self-contained breathing apparatus**

After performing **background** sample collection activities only or when wearing Level D PPE, a dry decon may be performed instead of washing with a low phosphate detergent (e. g. Alconox) and rinsing with tap water. After the initial recon and between **background** sample locations, the over boots and outer gloves (i.e. latex gloves) will be removed and replaced after completing each background sampling point. The discarded protective equipment will be appropriately disposed of in waste bags. In addition, if outer protective clothing (e.g. Tyvek) is used and becomes accidentally torn or ripped during the sampling activities, it will be removed and disposed in the waste bag and replaced before sampling another location.

Sampling Equipment Decontamination

Whenever possible, only disposable equipment will be used. As detailed in the previous sections, however, all non-disposable stainless steel or carbon steel equipment involved in field sampling activities will be decontaminated prior to and subsequent to any sampling activity. Decontamination of sampling equipment will be kept to a minimum in the field and, whenever possible, dedicated

sampling equipment will be used. Decontamination of stainless steel or carbon steel sampling equipment, including hand augers, split-spoons, scoopulas, spoons, trowels and bailers, and others will be conducted as follows:

1. Wash and scrub with soapy water containing a low phosphate detergent (e. g. Alconox).
2. Rinse with tap potable water.
3. A **10% nitric acid** rinse (ultra pure grade) when sampling for **inorganics**. If carbon steel utensils are used they will be rinsed with a 1% nitric acid solution to avoid the stripping of metals.
4. Rinse with tap potable water. *
5. **Methanol** rinse followed by **hexane** rinse (solvents are pesticide grade or better) for equipment involved in the sampling of **organics**.
6. **Methanol** rinse (pesticide grade).
7. Analyte free-water rinse. *
8. Air dry (sufficient time will be allowed for the equipment to completely dry).
9. Wrap or cover the decontaminated sampling equipment with aluminum foil for transport and handling.

*** The volume of water used must be at least five (5) times the volume of the solvent or solution used in the preceding step.**

Sample Sealing, Packaging, and Documentation

Sample sealing, packaging, and documentation will be done in accordance with the approved "PREQB Superfund PA/SI Division QAPP for SSI" (Revision 8, November 7, 2003).

Following sample collection and decontamination, the TDD number, date, case number, and sample number will be written on the Bottle Lot Number Form (i.e. sample labels) with indelible ink and tied or stuck to the bottles containing the samples. Each bottle will then be secured with a custody seal, taped shut, and placed inside individual plastic bags with a particular sample tag. Each sample

will be recorded in the respective Traffic Report. The traffic reports and chain-of-custody documentation will be included with the samples in the appropriate coolers. The coolers will be sealed with two or more chain-of-custody seals and shipped via United Parcel Service (UPS) to the designated laboratory on the day of sampling. Please refer to the Chain-of-Custody Procedures of the approved "PREQB Superfund PA/SI Division QAPP for SSI" (Revision 8, November 7, 2003).

ATTACHMENT C

INVESTIGATION - DERIVED WASTE PLAN

INVESTIGATION - DERIVED WASTE PLAN

Investigation-derived wastes (IDW) include disposable personnel protective equipment (DPPE), disposable-sampling equipment (DSE), purged groundwater, and decontamination liquids (water and other fluids). DPPE and DSE will be decontaminated and rendered non-hazardous before being disposed of adequately.

If any organic decontamination liquids are generated and considered as Resource Conservation and Recovery Act (RCRA) hazardous wastes, they will be disposed off-site in compliance with the off-site policy or in compliance with the same requirements regulating conditionally exempt small quantity generators guidelines (40 CFR Part 261.5 (g)(2) and 40 CFR Part 262.34). Refer also to the USEPA, "Management of Investigation - Derived Wastes During Site Inspections", May 1991.

If a water well is purged to be sampled, the purged groundwater will be poured onto the ground next to the well and allowed to infiltrate or disposed of at the site's Treatment and Disposal Unit, if any. This will be performed based on signed agreements with the owners of the wells to be sampled. If not authorized by the owner, the purged water or other non-hazardous decontamination liquids will be placed in a marked container and disposed as specified in the previous paragraph.

Any residual of soils not collected as samples will be returned to the same sample location and covered with surrounding soil. Any sediment portions not collected will be returned to the surface water body.

ATTACHMENT D

EQUIPMENT LIST

EQUIPMENT LIST

I. Sampling

	A. Solid Matrix Sample Collection	Amount Required
☑	Augers	_____
☐	Blenders	_____
☑	Scoops (large)	_____
☑	Scoopulas	_____
☑	Spoons	_____
☑	Stainless Steel Bowls (large)	_____
☐	Stainless Steel Buckets	_____
☑	Trowels	_____
☑	Bowls (small)	_____
	B. Aqueous Matrix Sample Collection	
☐	Bailer, 2" with Leader	_____
☐	Bailer, 4" with Leader	_____
☐	Conductivity Pen	_____
☑	Disposable Beakers	_____
☐	Generator	_____
☐	Honda Trash Pump	_____
☑	Electronic Water Level Indicator (M Scope)	_____
☑	pH Calibration Solutions	_____
☑	pH Conductivity Meter	_____
☑	Conductivity Solutions	_____
☐	Polypropylene Rope	_____
☐	Rubber Discharge Hose	_____
☐	Polypropylene funnel	_____

C. Sampling Site Location

- ☑ Binoculars _____
- ☑ Compass _____
- ☐ Fiberglass Tape Measure, 200' _____
- ☑ Fiberglass Tape Measure, 300' _____
- ☑ Flagging Tape _____
- ☐ Range Finder (103x) and (600x) _____
- ☐ Steel Tape Measure, 100' _____

D. Sample Containers

- ☑ Amber Bottle, 80 oz. _____
- ☑ Glass Jar, 8 oz. _____
- ☑ Glass Jar, 4 oz. _____
- ☑ Polyethylene Bottle, 1 liter _____
- ☑ Encore 5 g disposable volumetric samplers _____
- ☑ VOA Vial, 40 ml _____

E. Blank Water

- ☑ Amber Bottle, 80 oz. _____
- ☑ Polyethylene Bottle, 1 liter _____
- ☑ VOA Vial, 40 ml _____

F. Sample Packaging

- ☑ Clear Tape _____
- ☑ Duct Tape _____
- ☑ Filament Tape _____
- ☐ Masking Tape _____
- ☑ Sample Cooler _____
- ☑ Vermiculite _____
- ☑ Ziplock Bags 4" x 9" _____
- ☑ Ziplock Bags 8" x 12" _____
- ☑ Ziplock Bags 12" x 22" _____

G. Sample Preservation

- ☑ Disposable pipettes/bulbs _____
- ☑ Cyanide Spiking Kit _____
- ☑ Hydrochloric Acid, 5 ml ampoules _____
- ☑ Nitric Acid, 5 ml ampoules _____
- ☑ Sodium Hydroxide Solution _____
- ☑ pH Paper: _____
- ☑ pH range 1.7 - 3.8 _____
- ☑ pH range 0 - 14.0 _____

II. Photo Documentation (See Equipment Personnel)

- ☑ Batteries _____
- ☐ 35 mm Cannon T-50 _____
- ☑ 35 mm Cannon Sure Shot _____
- ☑ Film, C-135 12 Exp. ASA-100 _____
- ☐ Flash Unit _____
- ☑ Minolta Weathermatic Dual 355 mm _____
- ☐ Polaroid Spectra AF Instant _____
- ☑ Tripod _____
- ☑ Video Camera _____
- ☐ Lens _____

III. Decontamination

- ☑ Alconox _____
- ☑ Baking Soda _____
- ☑ Aluminum Foil _____
- ☑ Eyewash Station, 5 gallon _____
- ☑ Galvanized Buckets _____
- ☑ Garden Sprayer _____
- ☑ Handle Brush, (large) _____
- ☑ Handle Brush, (small) _____
- ☑ Paint Can w/lid & snaps, 1 gallon _____

- ☑ Plastic Rolls Sheeting _____
- ☑ Safety Goggles _____
- ☑ Spare Water Jug _____
- ☑ Squeeze Bottle _____
- ☐ Wash Tubs Galvanized _____
- ☑ Hexane _____
- ☑ 10% Nitric Acid in distilled H_2O _____
- ☑ Methanol _____

IV. Dermal and Respiratory Protection

A. Protective Clothing

- ☐ Butyl Rubber Gloves _____
- ☐ Encapsulated Suit _____
- ☐ Fireman Boots _____
- ☑ Latex Boot Covers _____
- ☑ Latex Surgical Gloves _____
- ☐ Leather Work Gloves _____
- ☐ Neoprene Gloves _____
- ☐ Rain Jacket _____
- ☐ Rain Suit _____
- ☐ Saranex (small) _____
- ☐ Saranex (medium) _____
- ☐ Saranex (large) _____
- ☐ Saranex (XX-large) _____
- ☑ Tyvek (small) _____
- ☑ Tyvek (medium) _____
- ☑ Tyvek (large & X large) _____
- ☐ Viton Gloves _____
- ☐ Waders _____
- ☑ Nitrile Gloves _____

B. Respiratory Protection

- ☐ Air Escape Packs, 10 min _____
- ☐ Disposable Dust Respirator _____
- ☐ PAPR Cartridges _____
- ☐ PAPR Extra Battery Pack & Charges _____
- ☐ Powered Air-Purifying Respirator (PAPR) _____
- ☑ Respiratory Cartridges Type GMCH, GMA-H, GHD-H _____
- ☐ SCBA Spare Tanks _____
- ☐ Self-Contained Breathing Apparatus (SCBA) _____
- ☑ Full Face Respirator _____
- ☑ Half Face Respirator _____

V. Air Monitoring

A. Instruments (To be signed out by site safety officer)

- ☐ Combination Explo/O_2 meter _____
- ☐ Dragger Hand Pump _____
- ☐ Dragger Tubes, Type _____
- ☐ HNu Photoionization Detector 10.2 eV Prove _____
- ☐ HNu Photoionization Detector 11.7 eV Prove _____
- ☐ HNu 9.5 Probe _____
- ☐ H_2S Gas Indicator _____
- ☐ Mercury Sniffer _____
- ☑ Mini-Radiation Monitor _____
- ☑ Organic Vapor Analyzer _____
- ☐ OVA Chart Recorder _____
- ☐ Oxygen Indicator _____
- ☐ Personal Monitoring Dosimeter _____
- ☐ Metal Detector _____
- ☑ OVA Charger _____
- ☐ Dosimeter Charger _____

B. Calibration Supplies

- ☑ Air Equipment Calibration Tools _____
- ☑ Calibration Gases (Specify Type) _____
- ☑ Isobutylene _____
- ☑ Methane _____
- ☑ Hydrogen _____
- ☐ Non-Sparkling WrenCHng Bar _____
- ☑ Jewelers Screwdriver Set _____
- ☐ Allen Hex Socket Screwdriver Set _____
- ☐ Allen Key Set _____
- ☐ Cushion Handle Ax _____
- ☐ Wood-Handle Ax _____
- ☐ Ax _____
- ☐ Bolt Cutter _____
- ☐ Bow Saw _____
- ☐ Broom _____
- ☐ Bung Wrench _____
- ☐ Hammer _____
- ☐ Pick Ax _____
- ☐ Posthole Digger _____
- ☐ Rake _____
- ☐ Hand Saw _____
- ☐ Spark-proof Pick Ax _____
- ☐ Spark-proof Shovel _____
- ☑ Cable Cutter _____
- ☐ Hacksaw _____

VI. Handling of Investigation Derived Wastes

- ☑ Drums (55 gal) _____
- ☑ Plastic Trash Bags (45 gal) _____

VII. Radios (To be signed out by Site Safety Officer)	
☑ Battery Charger	_____
☑ Motorola 2-Way Radio	_____
VIII. Miscellaneous	
☐ Utility Knife	_____
☑ Caution Tape	_____
☐ Clipboard	_____
☑ Drinks Cooler	_____
☑ Kimwipes	_____
☑ Paper Towels	_____
☑ Tool Box (specify tools)	_____
☐ Car Battery	_____
☐ Ball Point Pens	_____
☑ Indelible Ink Pens	_____
☑ Custody Seals	_____
☑ Traffic Reports	_____
☑ Bottle labels	_____